



CHAPTER IV

Environmental Consequences

This chapter summarizes the potential environmental consequences of the Preferred Alternative defined in Chapter II - Alternatives. The baseline conditions enabling the evaluation of the potential social, economic and environmental impacts were established and defined in detail in Chapter III – Affected Environment in the DEIS and this FEIS. To begin gathering baseline information a study corridor was identified to serve as the limits of the study area. The study corridor was used to identify potential constraints and issues of concern. As Initial Concepts were defined for the project, the focus of analysis narrowed. The study team looked at what was referred to as the Initial Area of Investigation to assess impacts associated with each concept as they evolved into alternatives. Indirect impacts are often looked at on a much broader scale as appropriate for the resource. For example, impacts to water quality can be broader than the direct impacts that might take place within a project footprint or issues of connectivity can be looked at on a metropolitan, statewide or even national level depending on the project. The direct and indirect impacts associated with each of the project alternatives are discussed in detail in Chapter IV of the DEIS and are summarized in this chapter of the FEIS. Changes from the DEIS are also identified in this chapter.

The proposed action is a reconstruction or rehabilitation and includes an increase in mainline capacity for a portion of the study corridor. In Chapter IV of the DEIS, impacts of the alternatives are described within three subcorridors, defined in Chapter II of the DEIS: North Subcorridor; River Crossing Subcorridor; and CBD North Loop Subcorridor. Through the evaluation described in this chapter, a Preferred Alternative for the entire I-29/35 Study Corridor was identified. The Preferred Alternative for the study corridor is a combination of the Preferred Alternatives for each of the subcorridors.

The impacts analysis in this chapter is based on the use of a maximum footprint in the context of avoiding, minimizing and mitigating impacts, to assess environmental impacts. This provides the ability to accommodate other designs within the footprint that would have either equal or less impacts than what is indicated. The mainline and interchange types for each alternative as described in Chapter II of the DEIS were assumed in order to complete the impact analysis. The build alternatives include footprint to enable widening the I-29/35 mainline to six through lanes and reserve two additional lanes for the future. MoDOT will continue to look at ways to refine the footprint of the project during the design phase in order to avoid and minimize the impact to the resources.

A. Land Use Impacts

Since all of the build alternatives involve widening of the existing roadway, rather than a new alignment, the majority of the widening would occur within existing right-of-way or with partial acquisitions of property. Land use impacts include either total or partial acquisitions of land. The majority of partial impacts would occur to commercial, industrial, and vacant/open space land use, while a few partial property impacts would occur to multi-family residential and single family residential units.

There are a few total property acquisitions in the study corridor. However, some would occur to businesses in the industrial area of North Kansas City, south of 16th Avenue and others would occur in the industrial area south of the Front Street interchange in Kansas City, some of which are vacant buildings. Although land use impacts (total or partial acquisitions of land) would be necessary in some areas, the overall land use patterns adjacent to the corridor would not be disrupted as a result of the project. (Total and partial acquisitions of residences and businesses are discussed further in Section C – Right-of-Way Acquisition Impacts.)

B. Social Impacts

1. NEIGHBORHOOD AND COMMUNITY COHESION

The proposed alignment of the build alternatives would not have an impact on neighborhood or community cohesion in the study corridor. The existing neighborhoods would remain intact; there would be no severances of those neighborhoods resulting from the build alternatives. There are no total residential property acquisitions as part of the build alternatives.

2. TRAVEL PATTERNS AND ACCESSIBILITY

There are currently nine interchange access points to I-29/35, beginning just north of Missouri Route 210 in Clay County and continuing south on I-29/35/US 71 to the north side of the CBD Loop, designated as I-35/70 and US 24/40.

The North Subcorridor Build Alternative would not change the location of access to and from I-29/35, and as such, there would not be a change in travel patterns.

The River Crossing Subcorridor Build Alternatives incorporate changes to ramps at Bedford Avenue/Levee Road that would increase safety and access for the merging and diverging traffic on I-29/35. The interchange types evaluated at Front Street would not change access. The interchange type included with River Crossing Alternative B-2 would allow Front Street to have a more direct connection under I-29/35 making it easier to cross the freeway.

The CBD North Loop Subcorridor build alternatives would modify access from the Paseo Boulevard where entrance and exit ramps would now occur on the right side of the freeway. This modification would improve travel movements between Independence Avenue and Front Street.

The exit ramps from north bound I-35 to US 24/Independence Avenue and from I-70 WB at Admiral, as shown for the CBD North Loop Subcorridor, are being removed due to the short weave distances between the exit and entrance ramps in this location. Other access points are available nearby to accommodate individuals who desire to exit the interstate system in this corner of the Loop.

For CBD North Loop Subcorridor Alternative A along the north side of the CBD Loop, the only modification of existing access would occur at Broadway. The Broadway interchange would have additional capacity. In order to minimize weaving conflicts, a number of exit and entrance ramps would be removed; however, the current level of access would be maintained or enhanced.

3. PUBLIC PARKS AND RECREATION AREAS

As discussed in Chapter III of the DEIS, publicly-owned parks and recreation facilities (including public pedestrian/bicycle off-street trails) have special status under the provisions of Section 4(f) of the U.S. Department of Transportation Act of 1966. Some Section 4(f) eligible properties may

also be subject to Section 6(f) of the Land and Water Conservation Fund Act, or the grants program UPARR 1010 as discussed in Chapter III of the DEIS. During the early stages of this project, Section 4(f) eligible parks and recreation facilities were mapped and identified as prime candidates for avoidance. Avoidance is required unless such avoidance would have other, more extraordinary socio-economic, environmental or engineering consequences.

Impacts to public parks and recreation facilities for each alternative are discussed below. If the Preferred Alternative encroaches on a Section 4(f) eligible property, a Section 4(f) evaluation must be conducted that tests all proposed alternatives. This evaluation must lead to a finding that there is no feasible and prudent alternative to the taking of that park or recreation area, and that all possible planning to minimize harm to the resource has been undertaken.

Impacts can also be in the form of “constructive use” due to proximal impacts. Constructive use occurs when the transportation project does not require land from a 4(f) resource, but the proximity impacts (indirect impacts due to noise, aesthetics, access, land use changes, and impacts to ecological features) are so severe that they cause substantial impairment to the protected activities, features, or attributes that qualify a resource for 4(f) protection [23CFR 771.135.(p)(iii)]. In both cases, the FHWA determines the applicability of Section 4(f).

a. North Subcorridor

The North Subcorridor Build Alternative would have no direct acquisition impacts to River Forest Park, and there would be no constructive use impacts, as there are no recreational facilities in the park and the highway currently exists adjacent to the park.

b. River Crossing Subcorridor

The River Crossing Build Alternatives would have no direct impacts or constructive use impacts to public parks or recreation facilities in this subcorridor as discussed below.

Berkley Riverfront Park

There would be no direct impacts to Berkley Riverfront Park by direct conversion of land, and since there is already an existing interchange near the park, and highway widening would not impair the utility of the park, there would be no constructive use impacts to the park.

Riverfront Heritage Trail

The Missouri River bridge(s) in each alternative would cross over the Riverfront Heritage Trail (bicycle/pedestrian path) located at the south side of the river at the levee. There would be no direct conversion of land, as the trail would be spanned and no piers would be placed on the trail. The trail is already spanned by the existing Paseo Bridge and, therefore, the new bridge(s) would not have a constructive use impact on the trail. However, there would be temporary impacts in the form of temporary closure of the trail during new bridge construction. As discussed in Chapter III, Section A.2.d. of the DEIS, the FHWA has determined that the trail is not a Section 4(f) eligible resource because its primary purpose is for transportation. It should be noted that the Riverfront Heritage Trail remained open during the recent Paseo Bridge Rehabilitation Project.

c. CBD North Loop Subcorridor

CBD North Loop Subcorridor Alternative A would have neither direct impacts by conversion of land, nor constructive use impacts to any of the public parks and recreation facilities in this subcorridor. Measures to avoid impacts to the parks and recreation facilities are discussed below.

Kessler Park and Belvidere Playground

Both of the Build Alternatives A and B have been aligned to avoid direct impacts to these parks and by utilizing retaining walls to keep roadway widening within existing right-of-way. Since the roadway currently exists adjacent to these parks and the upgraded roadway facility would not substantially impair the utility of the parks, there would be no constructive use impacts.

At the north corner of Belvidere Playground, the Paseo Boulevard north and southbound on/off-ramps would tie into the existing Paseo north and southbound lanes within the existing right-of-way in either alternative. The city's plans to realign the Paseo Boulevard would be able to tie into the on/off ramps at the north corner of Belvidere Playground, however the city's realignment would impact Belvidere Playground. This is discussed in further detail in the DEIS (See Chapter IV, B. 3. c.).

Margaret Kemp Park, Columbus Square Park and West Terrace Park / Case Park

The widening within Alternatives A and B would occur within existing right-of-way at these parks. Therefore there would be no direct impacts by land conversion, and since the roadway currently exists adjacent to these parks and the upgraded roadway facility would not substantially impair the utility of the parks, there would be no constructive use impacts.

The Riverfront Heritage Trail

There would be no direct impacts to the trail by conversion of land. At Wyandotte Avenue, neither of the alternatives would disrupt the existing bridge over I-29/35. The bridge would therefore remain and the existing route would continue to function. The Riverfront Heritage Trail remained open during the 2005 Paseo Bridge rehabilitation project. However, it is anticipated that there would be temporary closures of the trail during the construction activities associated with the I-29/35 Paseo Bridge construction project.

4. OTHER PUBLIC/SEMI-PUBLIC LANDS AND FACILITIES

A complete listing of public and semi-public lands and facilities is provided in Chapter III of the DEIS.

All of the scenic byways, boulevards and parkways would retain the same traffic patterns that currently exist. All public/semi-public impacts discussed below would be in the form of partial impacts to open or undeveloped space. No impacts would occur to schools, places of worship, community centers, museums, municipal/governmental facilities, or public safety/emergency service facilities.

The North Subcorridor Build Alternative would have no total acquisitions of public/semi-public lands or facilities. However, partial impacts would occur and are as follows:

- Partial acquisition of two parcels (one on each side of I-29/35) of the North Kansas City Levee District, occurring at the North Hillside Drainage Ditch (for culvert extensions), just north of the Armour Road interchange.

River Crossing Subcorridor Alternatives A and B-1 would have no total acquisitions of other public or semi-public lands and facilities. The seven partial impacts to property would be the same for both of these alternatives and would be as follows:

- Macon Street (in the city of North Kansas City) would be removed between Bedford Avenue and Levee Road.

- The North Kansas City Levee District, on the north side of the Missouri River at the levee – the new bridge(s) would span over the levee, and piers would be placed on Levee District property, on the north side of the levee. In addition, a small piece of this property would be acquired where the southbound off-ramp intersects with Levee Road.
- Property of the United States of America (Army Corps of Engineers) occurring at the wooded area between the north levee and the Missouri River – the new bridge(s) would span over this area, however piers would be placed within the property.
- The Kansas City Levee District, on the south side of the Missouri River at the levee – the new bridge(s) would span over the levee, and piers would be placed on the south side of the levee.
- Partial acquisition of a small portion of the east edge of city-owned open space inside the northwest loop of the existing Front Street interchange.
- Partial acquisition of the north edge of both city owned open space inside the southwest loop of the Front Street interchange. The parcel is owned by the city of Kansas City and currently being leased by the Kansas City Rugby Football Club through the Port Authority. FHWA has made a determination that Section 4(f) is inapplicable for the Kansas City Rugby football field due to the lease agreement and the intended future use of the property.
- Partial acquisition of the northeast corner of the land that the Port Authority is planning to develop as a mixed-use urban village, south of Berkley Riverfront Park.

River Crossing Alternative B-2 would have no total acquisitions, but would have six partial acquisition impacts and would be as follows:

- Macon Street (in the city of North Kansas City) would be removed between Bedford Avenue and Levee Road.
- The North Kansas City Levee District, on the north side of the Missouri River.
- The Kansas City Levee District, on the south side of the Missouri River.
- Property of the United States of America (Army Corps of Engineers) at the wooded area between the north levee and the Missouri River.
- City-owned open space inside the northwest loop of the existing Front Street interchange. Variation – proposed right-of-way extends into the loop more than that of Alternatives A and B-1.
- Partial acquisition of the east edge of the southwest loop of the Front Street interchange. Variation – impacts less property.

CBD North Loop Subcorridor Alternative A would have no total or partial acquisitions of other public or semi-public lands and facilities in this subcorridor.

5. SAFETY

The North Subcorridor Build Alternative would incorporate improved design features to promote the free and safe flow of traffic leading to a reduction in crash rates that, at a minimum, would match current statewide average crash rates for urban interstates.

River Crossing Subcorridor Build Alternative A uses the existing Paseo Bridge in place, so the existing crash rate in that section was used, because no substantial changes to safety and the design standards would occur to reduce the crash rates. Because the rate at which the crashes occur would remain the same as existing, but the amount of traffic using the facility would increase, the total amount of crashes would increase over time for this alternative.

In River Crossing Subcorridor Build Alternatives B-1 and B-2, new bridges would be constructed over the Missouri River, therefore updated safety and design standards would improve safety and decrease crash rates in these alternatives.

In CBD North Loop Build Alternative A, updated design features would be incorporated to promote the free and safe flow of traffic leading to a reduction in crash rates that, at a minimum, would match current statewide average crash rates for urban interstates.

6. ENVIRONMENTAL JUSTICE AND TITLE VI CONSIDERATIONS

During the course of the I-29/35 Corridor Study, there has been a concerted effort made to minimize residential displacements so that no residential properties are being taken in full and to minimize other impacts to the adjacent communities and neighborhoods. Public involvement and demographic analysis contributed to identifying and avoiding disproportionate impacts. To serve Spanish and Vietnamese speaking participants, interpreters for both languages were available at both hearings. Additionally, copies of the Draft EIS Summary were translated to Spanish and Vietnamese and made available at the hearings and on MoDOT's web site.

The character of the neighborhoods will not be impacted by this project. Vehicular access to neighborhoods has been preserved and an effort made to maintain those routes which are used by public transit. Noise and air quality impacts have been studied as part of this EIS and are discussed in detail in the DEIS, in Chapter III and later in Chapter IV of this FEIS. Based upon these efforts, this project will not have disproportionately high impacts to minority or low-income residents in the I-29/35 Corridor.

C. Right-of-Way Acquisition Impacts

The right-of-way acquisition impacts include land that is acquired for highway construction and operation purposes. Right-of-way impacts include both total acquisition (i.e. the entire tract, parcel or lot is acquired for right-of-way) and partial acquisition (i.e. only a portion of the tract, parcel or lot is acquired for right-of-way). With a partial acquisition, a habitable residence or viable commercial business would remain and the primary structure is not acquired. Table IV-1 shows total as well as partial acquisitions by land use category of single-family residential, multi-family residential, business/commercial, public park/recreation facility, and public/semi-public (other than public parks and recreation facilities) for each of the build alternatives.

1. RESIDENTIAL ACQUISITION IMPACTS

Residential impacts discussed below indicate the number of full and partial acquisitions. These acquisitions are based on conceptual engineering completed as part of this DEIS. The number of impacts could change as design details are developed.

a. North Subcorridor

There would be no total or partial acquisitions of single-family residences in the North Subcorridor. There would be no total acquisitions of multi-family residences in this subcorridor. However, there would be one multi-family partial impact. This would occur at the Spanish Eight apartment complex at the northwest quadrant of the Armour Road interchange. Although property would not be acquired, it would be necessary to remove the entry drive that allows access into the middle of the complex. The entry off of Ozark Street would still remain.

**Table IV-1
Right-of-Way Impacts**

Subcorridor & Alternatives	Total Acquisitions					Partial Acquisitions				
	Single-Family	Multi-Family	Business	Public Park/ Rec.	Public/ Semi-Public**	Single-Family	Multi-Family	Business	Public Park/ Rec.	Public/ Semi-Public**
North Subcorridor										
Build Alt. *	0	0	1	0	0	0	1	6	0	2
River Crossing Subcorridor										
Build Alt. A*	0	0	0	0	0	0	0	20	0	7
Build Alt. B-1*	0	0	0	0	0	0	0	20	0	7
Build Alt. B-2*	0	0	0	0	0	0	0	20	0	6
Build Alt. C	0	0	0	0	0	0	0	20	0	6
CBD North Loop Subcorridor										
Build Alt. A*	0	0	1	0	0	3	0	4	0	0
Build Alt. B	0	0	1	0	0	4	0	4	0	0

* Indicates Preferred Alternative. In the River Crossing Subcorridor, Alternative A or B is Preferred.

** Other than public parks and recreation facilities

NOTE: In addition to the costs of total acquisitions, the right-of-way cost estimates include the costs of right-of-way project overhead, easements, and the costs of partial acquisitions.

SOURCE: MoDOT District 4 and HNTB Corporation, 2005.

b. River Crossing Subcorridor

There are no residential areas in the River Crossing Subcorridor and therefore there would be no residential impacts by the build alternatives.

c. CBD North Loop Subcorridor

There would be no total acquisitions of single-family residences by either of the build alternatives in the CBD North Loop Subcorridor. However, CBD North Loop Alternative A would result in three partial impacts, all of which would occur at the east side of the Columbus Park Neighborhood (west side of I-29/35): The partial acquisitions are shown below:

- One single-family residential property impacted along the rear property line, including an out-building (small shed).
- Two vacant residential properties impacted along the rear property lines, one of those with an acquired out-building (small shed).

2. RELOCATION POLICIES

Relocation policies are discussed in detail in Chapter IV of the DEIS.

3. AVAILABILITY OF HOUSING

There would be no total acquisitions of single-family residences or multi-family residences in any of the build alternatives, therefore no residents would be displaced and in need of replacement housing.

4. COMMERCIAL/BUSINESS DISPLACEMENTS

There would be total impacts to commercial property as well as partial impacts to commercial property and privately owned, non-residential property in the three subcorridors. The total acquisitions would result in displacement of structures, and the partial acquisitions would

generally impact parking lots, access points or open/yard areas. Commercial/business displacements are summarized in Table IV-1 above.

a. North Subcorridor

No-Build Alternative

The No-Build Alternative would not require additional right-of-way, and therefore there would be no commercial/business acquisitions.

Build Alternative (Preferred) – Total Acquisitions

There would be one total acquisition of a business in this subcorridor as follows:

- The Saxton property at the southeast quadrant of the 16th Avenue interchange, on the east side of I-29/35, where the property and two buildings would be acquired for right-of-way. The buildings are presently being leased by Uphill UCS, LLC, North Kansas City Hauling and Tony Brown Tree Trimming.

Build Alternative (Preferred) – Partial Acquisitions

There would be six businesses and privately owned, non-residential property that would be impacted by partial acquisitions as follows:

- *Arby's* along the north side of Armour Road, at the northeast corner of the interchange quadrant – Three parking spaces would be removed at the south end of the property and access from Armour Road would be closed and replaced with a cul-de-sac on Taney Street. The drive-through would continue to function.
- *Captain D's* along the north side of Armour Road, east of Taney Street – Partial acquisition of property, including 12 parking spaces. Full access from Armour Road at Taney Street would be replaced with a cul-de-sac on Taney Street. Patrons could still access the area from Armour Road just east of this location.
- *O.U.P., Inc.* along the south side of Armour Road at the southwest corner of the interchange quadrant – No property would be acquired; however, access would be changed. There would no longer be egress at the east driveway due to its proximity to the on-ramp access. The traffic light would be removed at Ozark Street and the only access to and from the property would be at the west driveway (right-in and right-out).
- Vacant non-residential property on the west side of the I-29/35 southbound on-ramp, owned by American Lodging – Partial acquisition of the side yard area adjacent to the highway, and acquisition of one out-building.
- *Cook Composites & Polymers Company*, south of 16th Avenue on the west side of I-29/35 – Partial acquisition of open land.
- *J. E. Dunn Construction Company*, south of 16th Avenue on the east side of I-29/35 – Partial acquisition of the northwest corner of property used as a storage area for construction equipment and materials, and impact to the entry drive which would require relocation.

b. River Crossing Subcorridor

No-Build Alternative

The No-Build Alternative would not require additional right-of-way, and therefore there would be no commercial/business acquisitions.

Build Alternatives A and B-1 (Alternative A or B is Preferred)

Alternatives A and B-1 (Alternative A or B is Preferred) – Total Acquisitions – There would be no total business acquisitions by either of these alternatives in this subcorridor. One building would be acquired within the Kansas City Industrial Contractors, Inc. complex. It is one building of seven on the property and is therefore considered a partial impact of the business establishment (see further discussion below).

Alternatives A and B-1 (Alternative A or B is Preferred) – Partial Acquisitions – There would be 20 businesses (one having a building impact) and privately owned, non-residential property that would be impacted by partial acquisitions. The impacts would be the same for both alternatives, as follows:

- *Northtown Devco, c/o NT Realty, at 14th Avenue on the east side of I-29/35* – Partial acquisition of open land on a vacant parcel.
- *Northtown Devco, c/o NT Realty, south of 14th Avenue adjacent to the west side of I-29/35* – Partial acquisition of a small linear parcel that appears to be used as storage by the adjoining property, which is Houseman Ready Mix.
- *Burlington Northern Railroad, south of 14th Avenue* – The railroad property and tracks run under the I-29/35 bridge. The only partial impact would occur where there are new piers. An aerial easement over the property would be obtained for the new bridge.
- *Norfolk and Southern Railroad, north of Bedford Avenue* – The railroad property and tracks run under the I-29/35 bridge. The only partial impact would occur where there are new piers, and there would be an out-building that would require relocation on the property. An aerial easement over the property would be obtained for the new bridge.
- *Burlington Northern Railroad, adjacent to the north side of Bedford Avenue* – There is a narrow band of railroad property and tracks that run under the I-29/35 bridge. The only partial impact would occur where there are new piers. An aerial easement over the property would be obtained for the new bridge.
- Four businesses on a parcel located on the west side of I-29/35, south of Bedford Avenue – Partial acquisition of the north corner of the property (where the entry drive is located), the east edge of the paved drive along the east side of the property, and a small tip of the south corner of the property. The entry drive would have to be relocated, thereby resulting in removal of some of the storage area at the north end of the property. No marked parking stalls would be impacted, as these are at the building side of the drive, however, some parking occurs on the east side of the drive although it is not striped for parking. The width of the drive that would remain would be a minimum of 24 feet. There are four businesses on this property that would be indirectly affected by the driveway impacts:
 - *Gladstone Winnelson Co.* (kitchen and bath supplier) – entry drive and storage area impacts
 - *Custom-Bilt Metals* – drive impacts
 - *Pioneer Container Corp.* – drive impacts
 - *EnviroBate Global, Inc.* – yard impacts at south corner
- Four businesses on a parcel of property located on the east side of I-29/35, south of Bedford Avenue – Partial acquisition of the far west edge of the property. Some parking would be impacted and Macon Street would be removed resulting in removal of three access points off of Macon Street. Access would then be from Bedford Avenue only.

The four affected businesses, and corresponding parking impacts, are described below. Although there would be 22 spaces lost by right-of-way acquisition, 22 spaces could be replaced by adding parking stalls perpendicular to the proposed right-of-way on the west edge of the property after construction.

- *Prologis Distribution Center* – loss of seven parking spaces (out of 22)
- *S & K Cabinetry* – loss of four parking spaces (out of 14)
- *Central Tyco Fire Products* – loss of two parking spaces (out of six)
- *Future Foam* – loss of nine parking spaces (out of 18)
- *Wagner Industries, Inc.*, located on the east side of I-29/35 between Bedford Avenue and Levee Road – Partial acquisition of the west edge of the property would result in the loss of some open/yard area in the southwest corner, some of the west edge of a paved truck maneuvering area south of the building, three access points off of Macon Street (this street would be removed), relocation of the entry/identification sign, and 59 of the 177 car parking spaces on the west edge of the property and at the southwest corner of the building would be affected. In addition, to allow circulation and access to the parking lot on the west side of the building, the entry/identification sign would need to be relocated.
- *Isle of Capri Casino*, located on the east side of I-29/35, at the Front Street interchange – Partial acquisition of the surface parking area between Front Street and I-29/35 would result in the loss of 152 car parking spaces, two bus spaces and ten truck spaces. This is approximately 12 percent of the surface lot car spaces, 20 percent of the bus spaces and 43 percent of the truck spaces available in the surface parking lots. There are an additional 522 parking spaces in the parking garage at this time.
- *Kansas City Power & Light Co.*, located adjacent to the east side of the Isle of Capri Casino – Partial acquisition of a small piece of open/yard area of the southwest corner of the property.
- *Kansas City Southern Railway Co.*, located just south of the Front Street interchange – The railroad property and tracks run under the I-29/35 bridge. There is one parcel, but it is separated under I-29/35 by a privately owned parcel (see next parcel impact discussed below). The only partial impact would occur where there are new piers. An aerial easement over the property would be obtained for the new bridge.
- *Reed Oven Company* owns a parcel located on each side of I-29/35, between the two sets of Kansas City Southern railroad tracks – Partial acquisition would occur to a vacant open/yard area of the property.
- *Kansas City Industrial Contractors (KCI), Inc.* is a large construction related complex on each side of Guinotte Avenue and on each side of I-29/35 – The property contains seven warehouse buildings, open storage areas, a parking lot and a piece of vacant land. One of the warehouses is vacant. Impacts would include the removal of one large warehouse building where manufacturing operations take place, adjacent to the west side of I-29/35, on the south side of Guinotte Avenue. The acquisition of this building would require a business relocation. Other impacts include a vacant building located on the north side of Guinotte Avenue, on the east side of I-29/35 and vacant land on the west side of I-29/35.
- *Union Pacific Railroad*, located north of Dora Street – The railroad property and tracks run under the I-29/35 bridge and includes two parcels on each side of the highway that contain a private drive that is open to company vehicles only. The only partial impact

would occur where there are new piers on the property. An aerial easement over the property would be obtained for the new bridge.

Build Alternative B-2 (Alternative A or B is Preferred)

Alternative B-2 (Alternative A or B is Preferred) – Total Acquisitions – There would be no total business acquisitions by this alternative in this subcorridor.

Alternative B-2 (Alternative A or B is Preferred) – Partial Acquisitions – Alternative B-2 would have partial acquisition impacts to the same 20 businesses and privately owned, non-residential properties as those described for Alternatives A and B-1 above. Although the same parcels would be impacted, the impacts within some of those parcels would vary from those of Alternatives A and B-1 as follows:

- *Isle of Capri Casino* – Partial acquisition of the parking lot area would result in a loss of 210 surface car parking spaces, four bus spaces and 24 truck spaces. This would amount to a loss of 17 percent of the car surface parking spaces, 40 percent of the bus spaces and all of the truck parking spaces available in the surface parking lots. There is an additional 522 car parking spaces in the parking garage at this time.
- *Kansas City Southern* railroad property would have impacts from two more bridges (for on/off ramps) over the tracks.
- *KCI, Inc.* – The acquisitions would be the same as those that would be impacted by Alternatives A and B-1.
- *Reed Oven Company* – Partial acquisition of property would include more area than that impacted in Alternatives A and B-1.

Build Alternative C

Alternative C – Total Acquisitions – There would be no total business acquisitions by this alternative in this subcorridor.

Alternative C – Partial Acquisitions – Alternative C would have partial acquisition impacts to the same 20 businesses and privately owned, non-residential properties as those described for Alternative B-2 above. Although the same parcels would be impacted, the impacts within two of those parcels would vary from those of Alternative B-2 as follows:

- *Wagner Industries* – Partial acquisition impacts at the west edge of the property would result in a loss of 77 of the 177 car parking spaces and a dead-end parking lot on the west side of the building. In addition, there would be slightly more impacts to the truck maneuvering area southwest of the building, and slightly more impacts to the open/yard area in the southwest corner of the property.
- *Isle of Capri Casino* – Partial acquisition of the surface parking lot area would result in a loss of 449 car parking spaces, ten bus spaces and 24 truck spaces. This amounts to a loss of 36 percent of the surface car parking spaces, all the bus and truck parking spaces. There are an additional 522 parking spaces for cars in the parking garage at this time.

c. CBD North Loop Subcorridor

No-Build Alternative

The No-Build Alternative would not require additional right-of-way, and therefore there would be no business acquisitions.

Build Alternatives A (Preferred) and B

Alternatives A (Preferred) and B – Total Acquisitions – There would be seven (7) businesses and privately owned, non-residential property that would be impacted and would be the same for both alternatives, as follows:

- Vacant business/light industrial building, located at the northeast corner of Lydia Avenue and 5th Street, on the west side of I-29/35 – The property contains a building and an open/yard area. Previously known as Davis Electric Warehouse.
- *Chunco Foods*, located on the south side of Dora Street/E 2nd Street, on the west side of I-29/35. The property contains a warehouse building, a small parking area, and an open/yard area.
- Vacant non-residential parcel (zoned M-1: Light Industrial) located south of Dora Street on the west side of I-29/35 owned by United Missouri Bank.
- Vacant non-residential parcel (zoned M-1: Light Industrial) located on Lydia Avenue between 5th Street and Dora Street on the west side of I-29/35. The property contains an open/yard area.
- Vacant non-residential parcel (zoned M-1: Light Industrial) located half way between 5th Street and Dora Street on the west side of I-29/35 – a small parcel containing a billboard. The owner is listed as Comptroller Department (United Missouri Bank).
- Vacant non-residential parcel (zoned M-1: Light Industrial) located between 5th Street and Dora Street on the west side of the property containing the billboard. The property contains an open/yard area.
- *AID Industries*, located half way between 5th Street and Dora Street on the west side of I-29/35. This property contains a two-story brick building and an open/yard area.

Alternatives A (Preferred) and B – Partial Acquisitions – There would be no partial business acquisitions by these alternatives in this subcorridor.

5. AVAILABILITY OF COMMERCIAL PROPERTY

There is a wide availability of commercial property within one mile of the displaced buildings. The displaced commercial properties are warehouse/light industrial spaces ranging in size from approximately 1,800 square feet through 42,000 square feet in size. The structures have been there for many years and are variable in condition from poor to average.

There is a significant development of new warehousing space in the area of 19th Avenue and Ripley Street. The development is in the planning stages but a construction start date is still to be determined. The site lists 6 buildings for a total of 351,808 square feet. The building sizes range from 26,880 square feet to 86,400 square feet. This site has easy access to I-29/35.

Additionally there is vacant commercial property in the area. One listing had 24 properties ranging from 3,330 to 66,000 square feet. While the availability of such property is variable there is nothing to indicate, at this time, that this trend would discontinue. These properties all have easy access to I-29 and M-9.

D. Economic Impacts

1. ECONOMIC IMPACTS

The continued increase in economic activity in the Kansas City Metro region is evidenced by long-term trends in population growth and increased employment. Such growth would place ever-increasing demands on the existing transportation system. The build alternatives would have a positive impact on the economic activity in the area.

There are a number of major employment centers located along I-29/35 that would benefit from improved accessibility from the proposed action. The Bedford Avenue interchange area provides truck traffic with access to the nearby industrial area. Improving access to this area would help retain and improve this area's economic viability. The central business district (CBD) is located adjacent to I-35/70. Changes in access to employment located within the CBD would be important to maintaining or increasing economic viability in this area. Likewise, the overall changes to I-29/35 would help support the economic vitality of other employment locations within the project corridor. The project would also improve the suitability of sites for business expansion and contribute to increased employment from the attraction of new businesses.

By improving access to commercial areas located in the corridor, the proposed action would be a positive factor that may contribute to increased sales tax collections within the corridor and for the Kansas City Metro region.

Short-term impacts are the construction jobs created while the road is being built. Long-term benefits include increase employment resulting from businesses deciding to expand or relocate to an area because of improved access.

Construction of the build alternative would reduce travel time and increase the predictability of travel time. Both of these benefits are reductions in opportunity costs for transportation system users. A business or individual can use the time savings for more productive activities. The direct economic impact resulting from the reduction in travel time under the build alternatives is approximately \$1,252 million to \$1,310 million for a 20-year period in year 2005 dollars. More detail about change in travel time can be found in Table IV-3 of the DEIS.

The build alternative increases capacity on I-29/35 from the CBD Loop to Armour Road increasing the amount of traffic and system measured traveled distance. To use the new higher speed facility, drivers travel farther to access the roadway, increasing vehicle miles traveled. The build alternative results in an increase in vehicle miles of travel (VMT), which translates into increased vehicle operating costs. The 20-year increase in vehicle operating cost with the build alternative is approximately \$170 million to \$175 million in 2005 dollars. More detail about the change in operating costs can be found in Table IV-4 of the DEIS.

Construction of a build alternative would increase safety. Despite the higher speeds on a freeway, the reduction in merge conflicts and improved design standards would result in fewer crashes. The statewide average crash rate on an urban freeway is 126.57 crashes per hundred million vehicle miles (1998-2008). The actual crash rate on I-29/35 was much higher than the statewide average. The actual crash rates by mainline section are presented in Chapter I of the DEIS. The savings resulting from crashes avoided by through traffic using a safer roadway is estimated at \$298 million to \$338 million over 20 years in 2005 dollars. More detail about the change in operating costs can be found in Table IV-5 of the DEIS.

2. ECONOMIC DEVELOPMENT BENEFITS

Construction of any of the build alternatives would improve the efficiency of the transportation system for the Central Business District, Kansas City and North Kansas City. Regional accessibility for local businesses would be enhanced by improved efficiency and travel times on the I-29/35 corridor. Businesses located directly along the corridor would have improved accessibility, an important factor to the profitability of businesses.

3. SHORT-TERM ECONOMIC IMPACTS

The two primary short-term economic impacts that can result from a roadway construction project are business disruption caused by temporary traffic control and an increase in construction employment. Efforts would be made to maintain traffic during construction and to reduce the length of the construction period to the extent possible. Any of the build alternatives would increase jobs in construction and related sectors of the economy while the roadway is under construction. The infusion of construction related spending would have local and regional impacts as services and products are purchased to build the roadway. The wages paid to construction workers would be partially spent in local businesses.

E. Joint Development

Among the potential benefits of a transportation investment are opportunities to jointly enhance and/or preserve social, economic, environmental, cultural or visual values of an area. The I-29/35 Corridor is home to numerous commercial and industrial centers within the Kansas City region. The I-29/35 project would have a positive impact on the future development of these commercial and industrial centers. Efficient and safe highway travel to these centers would be critical for current and future developments.

There are no proposed or existing developments in the North Subcorridor in which the I-29/35 project would directly assist with future development or enhancement. However, the City of North Kansas City has been acquiring several land parcels on the east side of the M-210 interchange and is seeking to develop new retail and mixed-use redevelopment in the future. The build alternatives are anticipated to provide for improved regional access and safety. Additional access considerations relative to the M-210 corridor relate the important balance of providing for the safe and efficient movement of people with the needs for individual property access. Access management in the M-210 interchange area would be further coordinated during the project design process.

There is a potential development in the River Crossing Subcorridor in which the I-29/35 project would assist with future development or enhancement. There is an opportunity to coordinate with the Port Authority on the future development of property west of the Front Street interchange.

There are opportunities in the CBD North Loop Subcorridor to work with the local agencies and neighborhoods regarding certain types of corridor enhancements or urban design elements that could be integrated into the proposed action. Other opportunities include coordinating looking at bicycle and pedestrian accommodation over the Missouri River and linking this crossing to existing bicycle and pedestrian facilities in the area.

F. Pedestrian and Bicyclist Considerations

Although there are no sidewalks connected to the travel lanes of the I-29/35 facility, there are sidewalks on most of the side streets that cross over or under the facility, with the exception of

16th Avenue and Bedford Avenue in North Kansas City, and Dora Street and M-9 in Kansas City. Affected pedestrian/bicycle facilities, including sidewalks, bike routes and trails are discussed below for each subcorridor.

1. NORTH SUBCORRIDOR

At the Armour Road interchange, sidewalks currently exist on the north side of Armour Road and continue through the interchange, but there is no sidewalk on the south side of Armour through the interchange and eastward. In the build alternative, existing sidewalks would be replaced through the interchange to provide pedestrian connections along Armour Road. At 16th Avenue and Bedford Avenue, there are currently no sidewalks in this industrial area. The MARC regional bike plan designates Armour Road and 16th Avenue as future on-street bike routes.

2. RIVER CROSSING SUBCORRIDOR

In all of the build alternatives in this subcorridor, I-29/35 crosses over the Riverfront Heritage Trail at the south bank of the Missouri River. The new Paseo Bridge that would cross over the river would adequately span the trail and would also span the levee on the north side of the river, thereby allowing adequate clearance for the future (proposed) pedestrian/bicycle trail at that location.

As a result of the comments received on the DEIS, MoDOT, in partnership with MARC, conducted a study to identify and evaluate potential bicycle/pedestrian facilities across the Missouri River in the downtown Kansas City area. Representatives from Kansas City, North Kansas City, KCATA, Missouri Bicycle Federation and FHWA were included on the study team. The study included conceptual designs that were of sufficient detail to facilitate discussions and decisions regarding reasonable alternatives for potential facilities. The analysis included federal, state, local and regional policies applicable to bicycle/pedestrian accommodations. MoDOT worked with MARC and the community to select one reasonable alternative that is the priority for the region to be included for construction in the 2008-2012 STIP.

Based on the outcome of this study MoDOT is committed to letting for construction a reasonable and safe bicycle/pedestrian facility crossing the Missouri River along Missouri Route 9 between 10th Avenue in North Kansas City and 3rd Street in Kansas City via the Heart of America Bridge by 2012. Since the study area in this NEPA document does not include Missouri Route 9 north across the Missouri River, the appropriate environmental documentation and clearances will be completed as the bicycle/pedestrian project moves forward.

3. CBD NORTH LOOP SUBCORRIDOR

In this subcorridor, sidewalks exist on all of the streets that cross over or travel under I-29/35, with the exception of Dora Street and M-9 which has a paved shoulder on the northbound side rather than a sidewalk. In “Kansas City’s Bicycle Transportation Initiative,” planned and proposed on-street bike routes include Independence Avenue (from east of Paseo Boulevard to Charlotte Street), Troost Avenue (at the intersection with Independence) Charlotte Street (traveling under I-29/35/70), 5th Street (traveling under M-9), and Grand Avenue (crossing over I-29/35/70). In addition, the Riverfront Heritage Trail travels along 4th Street (under Broadway) and along Wyandotte Street (over I-29/35/70).

In CBD North Loop Alternative A, the only street with sidewalks that would be affected would be Broadway. The Broadway Bridge over I-29/35/70 currently has sidewalks which would be replaced.

MoDOT will coordinate closely with the cities of Kansas City and North Kansas City in providing adequate pedestrian and bicycle access across bridges appropriate for pedestrian/bicycle access, and in providing adequate bridging over pedestrian/bicycle routes or paths that travel under I-29/35. All new pedestrian and bicycle facilities would be constructed to current design and ADA standards.

G. Air Quality Impacts

The I-29/35 EIS, Transportation Improvement Program (TIP) # 590054 is included in the FY 2004-2007 TIP endorsed by MARC, the Metropolitan Planning Organization (MPO) for the region in which the project is located. Projects in the TIP are considered to be consistent with the 2030 regional transportation plan endorsed by MARC.

In January 2003, the FHWA and the Federal Transit Administration (FTA) determined that the 2030 regional transportation plan conforms with the State Implementation Plan (SIP) and the transportation-related requirements of the 1990 Clean Air Act Amendments. On January 6, 2004, the FHWA and the FTA determined that the TIP also conforms with the SIP and the Clean Air Act Amendments.

The project's design concept and scope are consistent with the project information used for the TIP conformity analysis. According to MARC, the I-29/35 project is part of an existing conformity plan and would not be affected by the implementation policy for the new 8-hour Ozone standard.

A discussion of MSATs and their effects can be found in Chapter III, Section B. 1.

H. Noise Impacts

1. NOISE ABATEMENT CRITERIA

The FHWA's Noise Abatement Criteria (NAC) and MoDOT's FHWA approved interpretation of the NAC, as detailed in MoDOT's Traffic Noise Policy¹, were used in the analysis of the acoustic impact of the proposed project.

2. TRAFFIC NOISE MODELING

a. North Subcorridor

Based upon the build alternatives, future design hour noise levels would exceed the NAC at 11 of the 26 representative receptors in the North Subcorridor, Table IV-8 of the DEIS. These 11 receptors represent 28 living units in the North Subcorridor. Future $L_{eq}(h)$ noise levels at these receptors would range from 66 to 77 dBA. The change in noise levels at these locations range from a decrease of one decibel to an increase of four dB.

b. River Crossing Subcorridor

Based upon the build alternatives, future design hour noise levels in the River Crossing Subcorridor would range from 59 to 68 dBA $L_{eq}(h)$. All of these noise levels are below the NAC for Activity Category C. The modeled noise levels are summarized in Table IV-9 of the DEIS.

¹ Traffic Noise Policy, Missouri Department of Transportation, MoDOT Preliminary Studies Group, Environmental Section, September 1997.

c. CBD North Loop Subcorridor

In the CBD North Loop Subcorridor, future design hour noise levels would exceed the NAC at 31 of the 76 representative receptors for Alternative A, Table IV-10 of the DEIS. Design hour exterior $L_{eq}(h)$ noise levels would range 66 to 75 dBA for the 78 living units that would be exposed to noise levels above the NAC. The interior noise level at the ReStart Homeless Shelter would range from 46 to 48 dBA $L_{eq}(h)$.

3. ABATEMENT MEASURES**a. North Subcorridor**

The residential development east of I-29/35 and north of Armour Road (M-210) would require a 549-foot long noise barrier that would range in height from 15 to 18 feet. Noise Barrier 1 would provide a 2 – 7 decibel reduction for four residences. The estimated cost for this barrier is \$168,358, based on \$18.00 per square foot, resulting in a cost of \$42,090 per unit. This barrier meets MoDOT's criteria for feasibility, but not the criteria for reasonableness.

The residential development west of I-29/35 and north of Armour Road (M-210), which includes a few residences north of Armour Road and two apartment complexes (The French Quarter Apartments and The Sunny Hills Apartments and Townhomes) would require a noise barrier 9 – 18 feet high and 3,050 feet long. This barrier (Barrier 2) would be comprised of two sections (2a & 2b) and would provide a noise reduction of 5 – 7 decibels for 30 living units. The estimate cost of this barrier is \$709,655. The cost per residence is \$23,655. Barrier 2 is both feasible and reasonable (see Exhibit IV-4 for location).

The information on these two noise barriers is summarized in Table IV-11 of the DEIS.

b. River Crossing Subcorridor

Noise levels adjacent to the River Crossing Subcorridor would not approach or exceed the NAC (see Table IV-9 of the DEIS), therefore, noise mitigation was not analyzed within this section of the project.

c. CBD North Loop Subcorridor

A noise barrier 843 feet long, ranging in height from 6 – 12 feet was analyzed for the Chouteau Courts public housing apartment complex located east of I-29/35 and north of Independence Avenue. Noise Barrier 3 would provide a noise reduction of 5 – 10 decibels for ten residences at a cost of \$14,051 per residence. This barrier meets MoDOT's definition for feasible and reasonable noise mitigation (see Exhibit IV-4 for location).

Noise Barrier 4 would need to be 18 feet high and 2,719 feet long to provide noise mitigation for 24 residences located between Pacific Street and Dora Street west of I-29/35, along the east side of the Guinotte Manor public housing area and the east side of the Columbus Park single-family residential neighborhood. This barrier would provide a noise level reduction ranging from five to nine decibels. The estimated cost of this barrier would be \$654,579 resulting in a cost per residence of \$27,274. Both noise reduction and the cost per residence would meet MoDOT's criteria for feasible and reasonable noise mitigation (see Exhibit IV-4 for location).

There are two residences north of Independence Avenue between Campbell Street and Harrison Street in the Columbus Park Neighborhood. Noise Barriers 5 and 6, for Alternatives A and B respectively, were analyzed for this area. The Alternative A noise barrier, Barrier 5, would need to be 1,983 feet long and 18 feet tall and it would only provide a two (2) decibel reduction in the design year $L_{eq}(h)$ noise level. Noise Barrier 6 would be shorter at 1,768 but would still only

provide a noise reduction of two (2) to three (3) decibels. Therefore, neither Barrier 5 nor Barrier 6 is feasible.

The information on these four noise barriers is summarized in Table IV-12 of the DEIS.

There are other individual residences along the I-29/35 corridor that would experience a noise impact. However, as can be seen from the analysis for Noise Barriers 5 and 6, the density of these residences make it impossible to design a noise wall which can provide a five dBA reduction for more than one receptor without exceeding the \$30,000 per benefited receptor criteria as stated in MoDOT's Noise Policy.

Based on the study completed for the I-29/35 corridor, Noise Barrier 2, Table IV-11 in the DEIS, in the North Subcorridor and Noise Barriers 3 and 4, Table IV-12 in the DEIS, in the CBD North Loop Subcorridor meet MoDOT's feasibility definition along with the engineering and economical aspects of MoDOT's reasonableness criteria. Public informational meetings, both formal and informal, will be conducted during the project development stage to solicit comments, opinions and concerns from local officials and the public.

Should the majority of affected residents at the separate locations impacted concur that noise abatement is desired adjacent to the I-29/35 corridor then the department will consider noise abatement which meets the feasible and reasonable criteria. If substantial changes in horizontal or vertical alignment occur during the remaining stages of design and construction, noise abatement measures will be reviewed. A final Noise Report will be prepared if needed during final design and following all receipt of public comments.

I. Water Resources Impacts

Modification to aquatic resources within the Build Alternatives includes culvert extensions at stream crossings, temporary access and piers at the Missouri River, filled non-jurisdictional wetlands at 16th Avenue, and a filled non-jurisdictional pond at 16th Avenue. The water resources located in the study corridor are shown on Exhibit III-6 of the DEIS, on the Alternatives Plates in Appendix C, and on plan view maps in Appendix I of the DEIS.

1. STREAM IMPACTS

The stream crossings include the Missouri River (perennial), the North Hillside Drainage Ditch (an intermittent tributary of the Missouri River) and an unnamed tributary that flows into the North Hillside Drainage Ditch (all shown as blue lines on the USGS maps). The existing culverts of the two intermittent streams would be extended to accommodate additional roadway width.

Stream impacts are summarized in Table IV-12 of the DEIS. The Missouri River is currently crossed by the Paseo Bridge and would continue to be bridged in order to minimize impacts. Since the project involves improvement of an existing roadway, all of the stream crossings have previously been culverted, relocated, or bridged. As a result, stream impacts are minimal. The impacts to streams within the I-29/35 Study Corridor are as follows:

a. North Subcorridor

Build Alternative (Preferred)

The build alternative would have impacts on two intermittent streams in this subcorridor. Up to 130 feet (0.03 surface acres within the ordinary high water mark) of the intermittent non-jurisdictional unnamed tributary to North Hillside Drainage Ditch, would be impacted

through construction of the project: up to 15 feet would be impacted through culvert extensions on the west side of I-29/35; 15 feet of culvert extension on the downstream end (east side of I-29/35); and up to 100 feet of channel cut off and filled east of I-29/35. A new channel from the downstream culvert extension would be cut to tie into the existing stream channel within existing MoDOT right of way. Up to 139 feet of the intermittent North Hillside Drainage Ditch, will be impacted through culvert extensions, up stream and down stream (0.03 surface acres within the OHWM). The unnamed drainage ditch located north of 16th Avenue would be outside of the construction limits and would not be impacted by the roadway widening.

b. River Crossing Subcorridor

Build Alternatives

The three build alternatives would each involve crossing the Missouri River with bridge structures (from levee to levee), thereby having no substantial linear impacts to the river. The only surface area impacts would occur from the placement of piers within the OHWM of the river. During construction, temporary access impacts would also occur, as well as temporary impacts during potential bridge demolition. No causeways would be built across the river during bridge construction and none of the Build Alternatives would include approach fills impacting the river.

Alternative A (Alternative A or B is Preferred) – In Alternative A, the existing bridge would remain in place for southbound traffic and a new companion bridge would be built on the east side of the existing bridge for northbound traffic. The piers for the companion bridge would displace approximately 0.06 acres of surface area within the OHWM of the river.

Alternative B (Alternative A or B is Preferred) – In Alternatives B-1 and B-2, the existing bridge would be removed and two new bridges would be built, one east of the existing bridge (for northbound traffic) and one in the same location as the existing bridge (for southbound traffic) or one larger structure would be constructed within the same footprint. The piers for the two new bridges or the single bridge would displace approximately 0.12 acres of surface area within the OHWM of the river.

c. CBD North Loop Subcorridor

There are no streams within this subcorridor; therefore there would be no stream impacts by any of the alternatives.

2. WETLAND IMPACTS

The only vegetated wetland shown on the National Wetlands Inventory (NWI) maps within the study corridor was a potential “forested” (PFO1A) wetland area located on the north side of the Missouri River. Field investigations have been performed within the Initial Area of Investigation shown on Exhibit III-6 of the DEIS, including the streams to determine if vegetated wetlands are present. No wetlands were observed above the OHWM of the two streams north of Armour Road, and a Preliminary Jurisdictional Wetland Determination, according to the 1987 U.S. Army Corps of Engineers (USACE) Wetland Delineation Manual, was performed at the NWI site along the Missouri River. Following the DEIS, it was determined that this area did not meet all of the parameters to be considered a jurisdictional wetland. The USACE concurred with this finding in a letter dated May 26, 2006 (Appendix G).

There are three vegetated wetlands, all of which are located in the North Subcorridor. The Build Alternative in this subcorridor would impact two of these wetlands. A total of up to 0.04 acre of the 0.27-acre emergent wetland located north of 16th Avenue along the unnamed drainage ditch would be directly impacted by embankment fill, however, its source of hydrology would not be altered. The forested wetland along the unnamed drainage ditch would not be either directly or

indirectly impacted, as it is located outside of the proposed construction limits and its source of hydrology would not be altered. The second impacted wetland is the fringe wetland located along the outside of the pond located within the 16th Avenue loop ramp. A total of up to 0.04 acre of the fringe wetland would be filled with the removal of the pond, of which 0.02 acre is emergent wetland and 0.02 acre is forested wetland, which was determined to be non-jurisdictional by the USACE (see letter dated May 26, 2006 in Appendix G).

3. PONDS

The No-Build Alternative in all of the subcorridors would have no impacts to ponds. The only impact to ponds would occur in the North Subcorridor by the Build Alternative, where a 0.56-acre non-jurisdictional detention pond in the 16th Avenue loop ramp would be impacted by fill material. This pond has no outlet, but receives run off from the east side of the highway, inflow from a pipe that collects surface run off from the west side of the highway, inflow from a pipe flowing into the pond from the southeast, and overland flow collected by a drain inlet in a low area located between the east side of the pond and the loop ramp. There is no stream channel flowing in or out of this pond, and although it is within the historic 100-year floodplain, it is cut off from the Missouri River by the river's levee and is above the water level of the river as determined by an on-site survey. Therefore, there is no hydrologic connection to the Missouri River and as such, was considered isolated and non-jurisdictional (see letter dated May 26, 2006 in Appendix G). Although this detention pond would be drained and the area re-graded during construction, there would be a new detention area constructed in the same approximate area. The detention pond located south of 19th Avenue is outside of the Build Alternative right-of-way and would not be impacted. Pond impacts are summarized in Table IV-2 and are indicated by surface area in acres.

Table IV-2*
Water Resources Impacts

Subcorridor & Alternatives	Streams		Wetlands (by type)			Ponds
	Length (L.F.)	Surface Area (Ac.)	Emergent (Ac.)	Scrub-Shrub (Ac.)	Forested (Ac.)	Surface Area (Ac.)
North Subcorridor						
No-Build Alt.	0	0	0	0	0	0
Build Alt. **	269	0.06	0.06***	0	0.02***	0.56***
River Crossing Subcorridor						
No-Build Alt.	0	0	0	0	0	0
Build Alt. A**	0	0.06	0	0	0	0
Build Alt. B-1**	0	0.12	0	0	0	0
Build Alt. B-2**	0	0.12	0	0	0	0
Build Alt. C	0	0.12	0	0	0	0
CBD North Loop Subcorridor						
No-Build Alt.	0	0	0	0	0	0
Build Alt. A**	0	0	0	0	0	0
Build Alt. B	0	0	0	0	0	0

* Table IV-13 in DEIS page IV-52.

** Indicates Preferred Alternative. In the River Crossing Subcorridor, Alternative A or B is Preferred.

*** Pond and wetland impacts relate to non-jurisdictional waters.

SOURCE: HNTB Corporation, 2005.

4. ONLY PRACTICABLE ALTERNATIVE WETLAND FINDING

Implementation of the proposed action will result in the loss of approximately 0.08 acres of wetlands although the USACE has determined that they are non-jurisdictional. The evaluation of these losses is contained in Chapter IV of the Draft EIS. In accordance with Executive Order

11990, avoidance and minimization of wetland impacts have been considered during project development, and design adjustments made where feasible. Because of geometric design considerations associated with widening the existing highway, there are no practicable alternatives to the wetlands impacts shown. Based on these considerations, it is determined that there is no practicable alternative to the proposed construction in wetlands and the proposed action includes all measures to minimize harm to wetlands which may result from such use.

J. Water Quality Impacts

1. SURFACE WATER QUALITY IMPACTS

a. Build Alternatives

Direct water quality impacts include highway or bridge runoff, construction-related impacts, and operation and maintenance related impacts.

Construction related impacts are primarily due to the erosion of cleared areas, operation of heavy earth-moving equipment, and storage of construction materials and supplies, and could include pollutants such as petroleum products, sedimentation, and nutrients leaching from seeded and mulched bare areas. Temporary impacts to water resources in and adjacent to the I-29 corridor can be prevented or minimized by following the management practices outlined by the Missouri Department of Conservation (MDC) including the State Channel Modification Guidelines when modifying channels or relocating streams. The Missouri River would be bridged and all other stream crossings would utilize culvert extensions that maintain the low-flow characteristics of the streams.

In addition, to protect the environment from sedimentation and construction pollutants during the building phase, the control of water pollution is to be accomplished by the use of MoDOT's Pollution Prevention Plan. Control measures include the use of temporary berms, ditch checks, slope drains, sediment basins, straw bales, silt fences, seeding and mulching. Temporary and permanent runoff drainage (retention or detention) basins would also be designed and installed to lessen water quality impacts by trapping sediment and other contaminants, while reducing erosive storm surges.

2. GROUNDWATER QUALITY IMPACTS

There are no public drinking wells or sole-source aquifers within the study corridor, however wells are located within one mile of the corridor. These wells are located up gradient from the study area, and assumed to be installed to prohibit near surface influence. The water is also treated before use. Therefore, no immediate effects are anticipated. Vegetated slopes and swales, and detention systems in appropriate locations can provide treatment of potentially polluted runoff from the roadway, thereby avoiding or minimizing impacts to groundwater quality.

K. Floodplain Impacts

Exhibit III-6 of the DEIS and the Alternatives Plates in Appendix C show the extent of the base 100-year floodplain and the regulatory floodway boundaries throughout the study corridor.

1. FLOODPLAIN ENCROACHMENT

The encroachments of the 100-year floodplain and the regulatory floodway would be the result of widening or re-aligning the highway, and are described below and summarized in Table IV-3.

The flooding source for the River Crossing and CBD North Loop Subcorridor is the Missouri River. The North Subcorridor includes the North Hillside Drainage Ditch and an unnamed

tributary of the ditch. The No-Build Alternative in each of the subcorridors would have no impacts to the 100-year floodplain or the regulatory floodway.

Table IV-3*
100-Year Floodplain and Regulatory Floodway Encroachments

Subcorridors & Alternatives	100-Year Floodplain Crossing (linear feet)	100-Year Floodplain (acres)	Regulatory Floodway (acres)
North Subcorridor			
Build Alternative**	1780	1.39	0
River Crossing Subcorridor			
Alternative A**	120	0.20	0.18 (piers)
Alternative B-1**	120	0.20	0.18 (piers)
Alternative B-2**	370	0.49	0.18 (piers)
Alternative C	370	0.49	0.18 (piers)
CBD North Loop Subcorridor			
Alternative A**	0	0	0
Alternative B	0	0	0

* Table IV-14 in DEIS page IV-55.

** Indicates Preferred Alternative. In the River Crossing Subcorridor, Alternative A or B is Preferred.

SOURCE: HNTB Corporation, 2005.

a. North Subcorridor

Build Alternative (Preferred)

Impacts on the floodplains occur through widening of the existing roadway and the subsequent extension of the drainage structures.

b. River Crossing Subcorridor

The build alternatives for the River Crossing Subcorridor are as follows:

- ***Alternative A (Alternative A or B is Preferred)*** – A new companion bridge would be constructed on the east side of the existing bridge (the existing Paseo Bridge would remain in place).
- ***Alternative B (Alternative A or B is Preferred)*** – The existing Paseo Bridge would be removed and two new bridges or one larger structure would be constructed. If two new bridges were constructed the new southbound bridge would be in the same location as the existing bridge. Alternative B-1 includes a modification of the existing Front Street interchange, and B-2 includes a new SPUI at Front Street.

Bridge “type” options under consideration for the river crossing include:

- Construction of a bridge parallel to and downstream of the existing Paseo Bridge. The new bridge could be a tied arch with two spans, cable stayed, truss, or suspension type. The pier locations matching those of existing bridge (Alternative A).
- Construction of a deck girder, tied arch or cable stayed bridge parallel to the existing (Alternatives B-1, B-2 and C).
- Construction of one new bridge in the general vicinity of the existing Paseo Bridge (Alternatives B-1, B-2).

The second set of options (for Alternatives B-1 and B-2) requires pier locations that do not match the existing bridge. In Alternative A, construction of a new bridge with pier locations matching the existing structure also may result in additional hydraulic losses, depending on the

separation distance between the structures. If the new bridge is located very close to the existing, and the new piers are aligned with the existing ones, then very little or no additional hydraulic loss would be expected. Moved farther apart, to where the existing and new structure each has its own distinct impact on flood flows, then additional conveyance may be required, similar to that described above.

Alternatives A and B-1 would encroach on 0.18 acres of floodplain and regulatory floodway of the Missouri River as a result of new bridge piers, including a total length of 90 linear feet with all of the new piers. In addition, Alternatives A and B-1 would encroach on 0.02 acres of existing Zone AH floodplain along Front Street for a length of 30 linear feet. However, the proposed widening would be designed to not increase 100-year flood impacts.

Alternative B-2 would encroach on 0.18 acres of floodplain and regulatory floodway of the Missouri River as a result of new bridge piers, including a total length of 90 linear feet with all of the new piers. In addition, Alternative B-2 would encroach on 0.31 acres of existing Zone AH floodplain along Front Street for a length 280 linear feet. However, the proposed widening would be designed to not increase 100-year flood impacts.

c. CBD North Loop Subcorridor

The only floodplain along this subcorridor is located at the far west end, however it would not be impacted by Alternative A (Preferred).

2. FLOODING RISKS

The proposed roadway modifications and bridge elevations are set well above 100-year frequency flood elevations, based on studies prepared by FEMA. The modifications would be designed to in no way redirect or increase the flow. About 400 feet west of I-29/35, FEMA maps indicate that the 100-year floodplain encroaches on Armour Road. The proposed road widening within this area would be designed to not increase flood elevations, and to maintain the existing conditions.

The build alternatives would result in an increase of up to approximately 22 acres of impervious pavement, which is approximately 1 percent of the total local drainage areas. Overall, an increase in runoff peaks and volumes of about 2 percent would be expected for those drainage areas.

3. IMPACTS ON NATURAL AND BENEFICIAL FLOODPLAIN VALUES

The footprint of the roadway fill placed in the floodplain is minor when compared to the total floodplain area. Thus, impacts on natural and beneficial floodplain values are minimal. However, if overbank excavation is necessary to offset hydraulic losses resulting during an interim period with two bridges with non-matching pier locations, there would be a temporary impact to natural values while vegetation is re-established within the excavated areas.

4. SUPPORT OF PROBABLE INCOMPATIBLE FLOODPLAIN DEVELOPMENT

The project corridor is presently an urban/suburban environment and consequently there is little undeveloped land for floodplain development. It is unlikely that incompatible development would be encouraged by the construction of this project.

**5. MEASURES TO MINIMIZE FLOODPLAIN IMPACTS
AND MEASURES TO RESTORE AND PRESERVE
THE NATURAL AND BENEFICIAL FLOODPLAIN VALUES**

All practical measures to minimize impacts to the floodplain would be incorporated into the project design.

6. ONLY PRACTICABLE ALTERNATIVE FLOODPLAIN FINDING

Implementation of the proposed action will result in the loss of approximately 1.88 acres of floodplains. Because of the geometric design considerations associated with widening of the existing highway, there are no practicable alternatives to the floodplain impacts shown. In accordance with Executive Order 11988 and 23 CFR 650, Subpart A, avoidance and minimization of floodplain impacts have been considered during project development and design adjustments made where feasible. The proposed action will conform to all applicable state floodplain protection standards. A hydraulic design study that addresses various structure size alternatives will be completed during the preliminary design phase.

L. Permits

Permits applicable to the highway build alternatives may be categorized into two groups: regulatory permits and construction permits.

1. REGULATORY PERMITS

a. Section 401 of the Clean Water Act (Missouri Department of Natural Resources)

Section 401 of the Clean Water Act requires that impacts to waters of the United States must also be certified by the appropriate state agency (MDNR in Missouri) as complying with applicable effluent limitations and water quality standards. An individual Section 401 Water Quality Certification from MDNR will be required for the project.

b. Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899 (U.S. Army Corps of Engineers)

The USACE will review the project to ensure its accordance with both Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899. Section 404 of the Clean Water Act prohibits the discharge of dredged or fill material into "Waters of the U.S." unless exempted or authorized by the USACE. The project will likely be permitted under an Individual Permit. However, if the final project impacts are determined to be minimal then the USACE may withdraw the Individual Permit and authorize the project using several Nationwide Permits.

c. Bridge Permit (U.S. Coast Guard)

The U.S. Coast Guard regulates bridges over navigable waterways through Section 9 of the Rivers and Harbors Act of 1899. A Section 9 permit will be required for the construction of any new bridge. Coast Guard approval will be required for cofferdam construction, steel erection and demolition.

d. Floodplain Permits

Portions of some of the build alternatives of this project occur in areas that are designated by FEMA as Special Flood Hazard Areas (SFHA). This requires obtaining a floodplain development permit from SEMA prior to construction or development. In addition, portions of some of the build alternatives occur within a regulatory floodway, and as such, a "No-Rise" certificate and statements as to the effects of possible flooding are required.

2. CONSTRUCTION PERMITS

MoDOT, in coordination with MDNR, has developed a Temporary Erosion and Sedimentation Control Program to protect the adjacent environment from sedimentation and construction material pollutants discharged from construction activities. This agreement satisfies the requirement for a National Pollutant Discharge Elimination System (NPDES) permit, Section 402

of the federal Clean Water Act and the Missouri Clean Water Act. MoDOT operates under the provisions of the Missouri State Operating Permit MO-R 100007 (or subsequent operating permit), which is a general permit issued for road construction statewide.

Other construction related permits could include temporary batch-plant permits issued by MDNR. Mitigation plans will be done to comply with the specific permit requirements. Additional construction permits may be required from local governments.

M. Natural Terrestrial Communities

1. NATURAL COMMUNITIES

As discussed in Chapter III of the DEIS, a search of MDC's Natural Heritage Database was conducted, but it was found that no significant, high-quality natural communities occur in the study corridor.

2. FOREST COMMUNITIES

Direct impacts to forested communities by the build alternatives would occur where it is necessary to remove woodland vegetation for roadway and bridge construction. Since the build alternatives involve the widening of an existing roadway, the majority of forest impacts would be at the edges of woodlands rather than fragmentation of contiguous habitats. Table IV-15 of the DEIS summarizes the acreages of upland and riparian forest that would be removed by each alternative within each subcorridor.

N. Wildlife Impacts

1. GENERAL

The wildlife species currently present have adapted to living near humans in a developed environment and would attempt to relocate in response to the habitat impacts of any of the alternative highway widening. However, some impacts could occur because smaller, less mobile species may have difficulty moving to other areas with suitable habitat. Other species that are relatively mobile may also be impacted because suitable habitat in an urban area is scarce, and the wildlife population is likely at or near carrying capacity. As a result, wildlife may have difficulty withstanding the loss of their limited habitat. In addition, the wildlife species within this urban corridor would continue to be subject to vehicle-induced mortality as they disperse to other areas at the outset of construction. There could also be a slight increase in wildlife mortality after construction, because of a wider roadway. Therefore, some impacts to wildlife could occur, although they would most likely be minimal because of the narrow limits of construction.

2. THREATENED AND ENDANGERED SPECIES

As discussed in Chapter III, the federally endangered pallid sturgeon, the federally threatened/state endangered bald eagle and the state endangered peregrine falcon have the potential of occurring in or near the study corridor. The build alternatives could have impacts to these species as discussed below.

a. Pallid Sturgeon (*Scaphirhynchus albus*) *(Endangered on both the federal and state level)*

A detailed discussion of the pallid sturgeon's habitat and characteristics is included in Chapter III of the DEIS. During the 2006 habitat survey it was determined that there is a lack of habitat

diversity in the proximity of the project and it is unlikely that the pallid sturgeon use the area for more than just passage upstream and downstream.

To avoid or minimize impacts to the pallid sturgeon, seasonal construction restrictions at the bridge could be employed if deemed necessary. For example, disturbance to the complex habitat behind (downstream of) the dikes that would alter the flow or conditions behind these dikes could be avoided during the overwintering period, thereby avoiding or minimizing impacts to the pallid sturgeon. Future design and coordination of bridge pier construction and possible removal will be discussed with the USFWS and the MDC during the design phase to consider seasonal patterns of habitat use and avoid potential habitat areas. MoDOT and FHWA will conduct any necessary Section 7 Endangered Species Act consultation prior to construction. FHWA and MoDOT are participating in informal consultation with the USFWS regarding the pallid sturgeon.

b. Bald Eagle (*Haliaeetus leucocephalus*)

(Threatened on the federal level, Endangered on the state level)

As discussed in Chapter III, potential bald eagle habitat occurs at the wooded area on the north shore of the Missouri River. Although this wooded riparian corridor provides potential bald eagle nesting or roosting habitat, there are currently no known or recorded locations of bald eagle nests or roosting areas within or near the study corridor, therefore none of the alternatives would have an impact on the bald eagle. Although no nesting occurs at this time, should nesting eagles be found within a mile of the Preferred Alternative prior to construction, MoDOT and FHWA will conduct any necessary Section 7 Endangered Species Act consultation.

c. Peregrine Falcon (*Falco peregrinus*)

(Endangered on the state level)

The MDC's Natural Heritage Database indicated that a peregrine falcon nest site exists on a tall building in the downtown Kansas City area, just south of (outside of) the study corridor. This building would not be impacted by any of the alternatives, nor would any other tall buildings.

d. Species of Conservation Concern

According to the MDC's Natural Heritage Database, the silver chub (*Macrhybopsis storeriana*) and the sturgeon chub (*Macrhybopsis gelida*) are ranked S3 (rare or uncommon) in the state and have been observed in the Missouri River. The silver chub has been observed in the river east of the study corridor and the sturgeon chub has been observed in the river northwest of the study corridor. During bridge construction, the area of disturbance within the river would be limited to pier construction and is therefore expected to be minimal and would not result in substantial water quality degradation or major alteration of the river habitat. Individual chub species that may be in the vicinity would either be unaffected or may temporarily avoid the construction area. Therefore, no major impacts to these species of conservation concern are anticipated.

O. Cultural Resources

1. CULTURAL RESOURCES

The potential impacts of the alternatives are discussed below for the historic and archeological resources identified during the cultural resources investigations and analysis presented in Chapter III of the DEIS.

With the exception of the possible replacement of Paseo Bridge with a new bridge, none of the proposed alternative alignments for the I-29/35 EIS Improvement Project would acquire any

property associated with any building, structure, object, site or district on or eligible for the NRHP. Should any of these resources be impacted, they will be handled based on the stipulations in the Memorandum of Agreement (MOA). The MOA can be found in Appendix F of this document. On August 11, 2006 the Advisory Council on Historic Preservation agreed with the adverse effect finding for this project and acknowledged that any changes would be handled based on the MOA. (See Appendix G for the August 11, 2006 Advisory Council on Historic Preservation letter.)

Further coordination has occurred with the SHPO based on a comment received since the publication of the DEIS in order to provide some clarification on the Paseo Boulevard. The portion of the Paseo considered in the I-29/35 project's APE is approximately one block north of Admiral or 7th Street and was not included in the previous historical surveys or NRHP assessments of the parkway. Because it was not completed until after 1950 and is not historically associated with the Paseo, MoDOT, the SHPO and City of Kansas City, Missouri concur that the small section of the Paseo in the I-29/35 project area does not constitute a contributing element of the historic Paseo. Furthermore, that particular one to two-block area where the Paseo has been extended north of Independence before terminating at I-29/I-35/Midtown Freeway has changed substantially since the 1950s, primarily the result of previous transportation improvements involving the construction of the interstate. Thus, it is concluded that this modern portion of the Paseo lacks historical significance and integrity and should remain excluded from the historical boundaries of the Paseo, 7th to 79th Street. A letter to the SHPO dated August 1, 2006 is included in Appendix G.

a. North Subcorridor

Build Alternative (Preferred)

The Build Alternative would have no impact on these resources since no properties, districts or bridges were noted as being on or eligible for the NRHP.

b. River Crossing Subcorridor

Build Alternatives

Alternative A (Alternative A or B is Preferred) – Alternative A would have no direct impact on the one bridge eligible for the NRHP, the Paseo Bridge (L734R1). This alternative has a companion bridge that would be constructed downstream of the existing Paseo Bridge.

The companion bridge type has not been selected at this time. The type of bridge selected would have a viewshed effect depending on the type of the bridge. There is presently no downstream parallel bridge so the new bridge would alter the views of the bridge and from the bridge.

As noted previously in Section C.4.b, the KCI, Inc. building (property JA-3A) would be removed. This industrial building is adjacent to NRHP eligible property JA-4 Mid American Storage, the former Smith and Sons Manufacturing Company. This would not be an adverse effect to the viewshed of property JA-4. Both buildings are located in an industrial area and the building removed is one and one half stories tall. The NRHP eligible property is six stories tall

Alternative B (Alternative A or B is Preferred) – This alternative would have a direct impact on the NRHP eligible Paseo Bridge (L734R1) since it could replace the existing Paseo Bridge with one of a pair of new structures or one larger bridge structure. The type of the replacement bridge has not been selected at this time.

As described in Alternative A above, the viewshed of the NRHP Property JA-4, the Mid-America Storage, would not be adversely effected by removal of the KCI, Inc. building as a part of this alternative.

c. CBD North Loop Subcorridor

Build Alternative A

Both alternatives would be constructed within existing right-of-ways, both state and city. There would not be any direct impact on any property, district or bridge on eligible for the NRHP. The two buildings which are being acquired are not adjacent to any NRHP eligible property, district or bridge.

Neither the site of the Town of Kansas Graveyard (Property MJA-122), which is partially located in the existing right-of-way of the M-9 and I-35/70 interchange, nor Property VJA117 would be affected by Alternative A (Preferred).

2. MITIGATION MEASURES

The Paseo Bridge, being eligible for the NRHP, is subject to the provisions of a Programmatic Section 4(f) of the Surface Transportation Act of 1966.

The Programmatic Section 4(f) for Historic Bridges and Form is included in Appendix E of this FEIS. This Programmatic Section 4(f) Evaluation has been completed and signed as if the Paseo Bridge is being removed. The Section 4(f) Evaluation will only be applicable in the event that the Paseo Bridge is removed as that has yet to be determined.

A Memorandum of Agreement (MOA) and Information to Accompany (ITA) the MOA for the Paseo Bridge and other properties in or eligible for inclusion in the National Register have been prepared and have been included in Appendix F of this FEIS.

P. Hazardous Waste Sites

Existing hazardous waste sites are discussed in detail in Chapter III of the DEIS.

1. HAZARDOUS WASTE SITE IMPACTS

The observed and documented hazardous waste sites listed in Chapter III were rated as having either a high, moderate or low potential for contamination. Three high potential sites were designated in Chapter III (Site #14 – American Railcar Industries, Site #20 – Cook Paint & Varnish, and Site #40 – KC Limited Partnership, formerly Habco). Sites #14 and #40 have been totally avoided. Although Site #20 would be avoided, it is part of an industrial complex comprised of other individual parcels, in which a portion of open land would be acquired (see further discussion under North Subcorridor Build Alternative).

The potential impacts of the alternatives and the proposed mitigation plans are discussed below for the potential hazardous and solid waste sites identified during the hazardous material screening. In addition, the text includes some discussion concerning the buildings that would be demolished in the alternatives in regard to the potential for contamination impacts.

a. North Subcorridor

Build Alternative (Preferred)

The build alternative would have no impacts to high or moderate potential hazardous waste sites identified during the hazardous material screening. Two metal buildings on the Cherokee

Distribution Services property (in the industrial area south of 16th Avenue, east side of I-29/35) would be demolished; however, this site was not included in any of the hazardous waste databases discussed in Chapter III of the DEIS. Through field reconnaissance, it was determined that the site poses a low potential for contamination, and no further investigations are recommended other than the MoDOT standard of environmental/asbestos inspection for demolition plans.

Although Site #20 (Cook Paint & Varnish) would be avoided, it is part of an industrial complex (between 16th and 14th Avenues, west of I-29/35) comprised of other individual parcels, in which a small portion of open grassed land on Site #19 (Cook Composites and Polymers) rated as having a low potential for contamination would be acquired. There are no structures on the parcel that is being partially acquired.

b. River Crossing Subcorridor

Build Alternatives

Alternatives A and B-1 (Alternative A or B is Preferred) – Alternatives A and B-1 would have impacts to one moderate potential hazardous waste site identified during the hazardous material screening.

- *Site #4 – KCI, Inc.* (formerly Excelsior Steel Furnace), is located south of Guinotte Street on the west side of I-29/35, and is rated as having a moderate potential for contamination. The building on this property would be acquired and investigation and cleanup of these sites may be necessary prior to construction. (This building is part of the KCI industrial complex that contains a total of seven buildings, six of which would remain on the complex.) Based on preliminary investigations it appears that this site contains soils that would need to be managed as regulated waste. Further investigations will be completed at the time of property acquisition.

Alternative B-2 (Alternative A or B is Preferred) – Alternative B-2 would have impacts on two moderate potential hazardous waste sites identified during the hazardous material screening.

- *Site #4 – KCI, Inc.* – (same as discussed above)
- *Site #6 – KCI, Inc.* is located on the east side of I-29/35, south of Guinotte Street. This site is rated as having a moderate potential for contamination. Both of the buildings on these properties would be demolished and investigation and cleanup of these sites may be necessary prior to construction. (This building is part of the KCI, Inc. industrial complex that contains a total of seven buildings, five of which would remain on the complex.) Based on preliminary investigations it appears that this site contains soils that would need to be managed as regulated waste. Further investigations will be completed at the time of property acquisition.

c. CBD North Loop Subcorridor

Build Alternatives

Alternative A (Preferred) – Alternatives A and B would have no impacts to high or moderate potential hazardous waste sites identified during the hazardous material screening. One vacant building, formerly Davis Electric (located in the industrial area south of Dora Street, west side of I-29/35), would be acquired, however, this site was not included in any of the hazardous waste databases discussed in Chapter III of the DEIS. Through field reconnaissance, it was determined that the site poses a low potential for contamination, and no further investigations

are recommended other than the MoDOT standard of environmental/asbestos inspection for demolition plans.

2. MITIGATION MEASURES

The preferred method of mitigation for the potential hazardous waste sites is avoidance. However, if due to other factors, a site cannot be avoided and is impacted by the project, site inspections and characterization would be performed as part of the design or construction process; in addition to the full Phase I investigation previously discussed for the KCI, Inc. buildings.

A positive impact of the build alternatives would be remediation or clean up of the waste sites located within the limits of the Preferred Alternative, where acquisition of property occurs. Remediation of solid and hazardous waste sites, and related contamination, most likely would be conducted in the preconstruction phase of the project.

Q. Visual Impacts

Visual quality impacts are determined by the degree of change in the visual environment as related to viewer response.

1. VIEWS OF AND FROM THE ROAD

There are two distinct categories of viewers, or viewer response, to be considered: (1) viewers who are users of the project facility and who have views of the surrounding environment (i.e. views from the road); and (2) the "visual receptors", or people who can observe the roadway from an adjacent vantage point (i.e. views of the road).

a. North Subcorridor

No-Build Alternative

Views Of the Road and Visual Quality – The No-Build Alternative in this subcorridor would not physically alter the existing visual quality of the environment through which the I-29/35 corridor travels. Since there would be no major changes in width or horizontal and vertical alignment, the existing visual environment and views *of* the road would essentially remain the same as current conditions.

Views From the Road – The views *from* the road would remain unchanged except in those areas that would be developed or redeveloped in the future. In this subcorridor, most of the current views *from* the road include industrial buildings, deteriorating buildings, numerous billboards, poor pavement conditions and high traffic volumes. The only notable high quality views *from* the road occur at the River Forest Park area.

Build Alternative (Preferred)

Views Of the Road and Visual Quality – In the North Subcorridor the existing visual environment is of low quality in the industrial and commercial areas, high to moderate quality in the residential areas, and high quality at the River Forest Park area. The build alternative would have an overall low visual impact on this environment.

Views From the Road – The views *from* the road would remain unchanged except in those areas that would be developed or redeveloped in the future. The only notable high quality views *from* the road would occur at the River Forest Park area.

b. River Crossing Subcorridor***Build Alternatives***

Alternative A (Alternative A or B is Preferred) – Views Of the Road and Visual Quality – In the River Crossing Subcorridor the existing environment is of low visual quality in the industrial areas and high quality at the Missouri River area. Alternative A would have an overall low visual impact on this environment.

A noticeable change, however, would occur at the Missouri River where a new companion bridge for northbound traffic would be constructed on the east side of the existing, historically eligible Paseo Bridge, which would remain in place for southbound traffic. Although some of the bridge options may be considered dissimilar in appearance to the existing bridge, this could also be viewed as a demonstration of progress in bridge design, thereby emphasizing the differences in bridge type and allowing the historic aspect of the existing bridge to stand apart from a new bridge with a more contemporary design.

Alternative A (Alternative A or B is Preferred) – Views From the Road – The views *from* the road would remain relatively unchanged except in those areas that would be developed or redeveloped in the future, and at the new bridge.

Alternatives B (Alternative A or B is Preferred) – Views Of the Road and Visual Quality – Alternatives B-1 and B-2 would have an overall low visual impact on the existing environment, and the views *of* the road would be the same as those described for Alternative A, with the exception of the bridges over the Missouri River. In Alternatives B-1 and B-2, the existing suspension bridge would be removed and two new bridges or one larger structure would be constructed.

The two interchange options at Front Street would have a low visual impact on the existing environment, since there is already an interchange at this location and no existing residential areas.

Alternatives B (Alternative A or B is Preferred) – Views From the Road – In Alternatives B-1 and B-2, the views *from* the road would remain relatively unchanged except in those areas that would be developed or redeveloped in the future.

c. CBD North Loop Subcorridor***Build Alternatives***

Alternative A (Preferred) – Views Of the Road and Visual Quality – In the CBD North Loop Subcorridor the existing environment is of low to moderate visual quality in the area between the Paseo Boulevard and Troost Avenue, and of moderate to high visual quality in the Kessler Park area, the Columbus Neighborhood area and the downtown area. Alternative A would have an overall low visual impact on this environment.

Alternative A (Preferred) – Views From the Road – The views *from* the road would remain relatively unchanged except in those areas that would be developed or redeveloped in the future.

2. AESTHETIC CONSIDERATIONS / VISUAL ENHANCEMENTS

MoDOT can incorporate aesthetics and urban design elements into the final design of the corridor, provided other funding sources are identified to pay for and maintain such

enhancements, in an integrated fashion to ensure the roadway and bridge changes would visually complement the character of the study corridor.

R. Energy

Energy considerations to be taken into account when evaluating the various alternatives include the energy consumed during normal operation and maintenance. Direct impacts include the energy consumed by vehicles using the facility. Indirect impacts include construction energy and such items as the effects of any changes in automobile usage due to the construction of the facility.

For any build alternative, traffic delays are anticipated during the reconstruction of I-29/35. Reductions in lane widths and shifts in traffic would reduce traffic speeds and cause delays during peak travel times. Delays to traffic on cross roads are also anticipated due to reconstruction of interchanges. It is expected that these various delays for traffic traveling through a construction zone would result in a temporary increased use of energy, in this case gasoline and diesel fuel. However, long term, the changes made on I-29/35 would result in decreased travel time. This would reduce the use of gasoline and diesel fuel required for travel on the highway.

S. Construction Impacts

Potential construction impacts are described in detail in this section of the DEIS. The specifications used for construction activities will meet federal standards that are included in the project.

1. WASTE DISPOSAL

Impacts would be mitigated by adherence to construction permit and contract conditions.

2. WATER QUALITY

Construction impacts on water resources include both direct and indirect impacts. Water quality impacts during construction activities could include increased sediment load with resulting increased turbidity levels in the river. Spillage of fuels, lubricants and other toxic materials during construction can impact the water quality of the river. Spillage of spoils from drilled shaft or footing excavation in the river can impact the water quality. Turbid water and suspended solids may be discharged from pumps used in de-watering activities during roadway, bridge and culvert construction directly to the waters of Missouri. This would be a temporary impact during construction.

3. AIR

Construction activity would cause temporary air quality impacts. These short-term effects would include the following:

- Increased emissions from heavy diesel construction vehicles and equipment. Emissions from construction vehicles and equipment would be controlled in accordance with emission standards prescribed under state and federal regulations.
- Increased emissions from vehicles as a result of decreased speeds through work zones. Efforts would be made to minimize these impacts by maintaining smooth traffic flow during construction periods. Further discussion of maintenance of traffic can be found in this section under Section 7. Traffic Impacts.

- Increase in dust resulting from grading operations and exposed soils. Dust generated by construction activities would be minimized by the implementation of dust control measures, such as water sprinkling and applications of calcium chloride to control dust and other airborne particulates.

4. NOISE

Noise from heavy construction equipment and haul trucks would result in unavoidable short-term impacts. Residents adjacent to the roadway would be most impacted by construction noise.

5. VIBRATION

Due to the proximity of the alignment to residential areas south of the Paseo Bridge to the northeast corner of the CBD Loop and along the north leg of the CBD Loop, a carefully planned and executed drilling and blasting program will be prepared, during the design development phase, which would place limits or controls on drilling and blasting activities.

6. BRIDGE IMPACTS

The existing I-29/35 Paseo Bridge could be removed by the proposed action depending on the alternative that is chosen. If the existing bridge were to be removed, it would likely be dropped into the Missouri River in sections and the sections would be removed by heavy construction equipment located on the bank or on barges in the river. During the time the bridge would be in the river, there would be some temporary disturbance to aquatic species. These are anticipated to be minor as the bridge superstructure and substructure occupy a small amount of the total volume of the water in the river channel.

The following information has been added since the DEIS. Regardless of the presence or absence of threatened and endangered species, the U.S. Coast Guard mandates many precautions on all bridge demolitions that occur in navigable waterways. These precautions are very thorough and specific. These precautions will be put into the contract for this demolition project. (See MoDOT letter to USFWS dated June 15, 2006 in Appendix G).

Prior to construction activities taking place, threatened and endangered species of wildlife surveys may be necessary to determine if special considerations are appropriate to minimize adverse impacts. These may include seasonal restrictions on land clearing and tree removal or demolition and construction activities in the river. The pallid sturgeon has no recorded instances of spawning activity in the vicinity of the bridge location. Seasonal construction restrictions could be employed in this location, if deemed necessary. During the 2006 habitat survey it was determined that there is a lack of habitat diversity in the proximity of the project and it is unlikely that the pallid sturgeon use the area for more than just passage upstream and downstream.

Migratory birds may nest in vegetation affected by the proposed construction near the vicinity of the bridge. In addition, migratory birds may also nest on bridge structures. The primary season for most migratory bird nesting activity in Missouri is between the dates of April 1 to July 15. However, some migratory birds are known to nest outside of the primary nesting season period. To the extent practicable, MoDOT will schedule vegetation clearing and bridge demolition activities outside of the primary nesting season dates to avoid or minimize adverse impact to nesting migratory birds.

At this time, bridge type studies and type selection has not been determined. Construction methods and impacts for the bridge can vary depending on the bridge type selected.

7. TRAFFIC IMPACTS

During construction, I-29/35's mainline capacity, to some degree, may be reduced or possibly closed for periods of time. The traffic capacity on I-29/35 and traffic access between I-29/35 and the local roadway system would be impacted.

The impacts of interchange reconstruction on the urban arterial system include a temporary loss of access to, from and across I-29/35. As the study corridor is located in an urban area, there are many alternative routes for traffic to use while access is reduced or restricted at interchanges during construction. The travel delay experienced by motorists would vary depending on the level of construction that is occurring at the time, and the time of day that the travel occurs. A lane closure in the peak direction of peak hour travel would result in shifts of traffic to alternative routes and in additional delays to motorists remaining on I-29/35. Delays may also occur in the non-peak directions and during non-peak hours, but the length of the delays would lessen with the lower traffic volumes that are present during these periods.

Traffic impacts during construction would be minimized by the availability of alternative regional travel routes. From a regional perspective, there are several alternate facilities serving north-south corridors: US 169, M-9, I-635, I-435 and M-291. A large part of the commuting trips originating north of the Missouri River would be expected to use alternate roadway routes and Missouri River bridges such as US 169, M-9, Chouteau Trafficway and I-435 during construction. In fact, in January 2003, the Paseo Bridge was closed for several weeks, as emergency maintenance was required. In spring 2005, the bridge was closed again for approximately four months, as a result of Phase I of a major rehabilitation project. During both of these closures a detailed traffic plan was prepared and used to direct vehicles to other roadways such as M-9, Armour Road, Broadway and Chouteau and to Missouri River bridges in the metropolitan area. None of the interchanges in proximity of the Paseo Bridge were affected during these closures. If sections of I-29/35 were to be closed as part of construction of the Preferred Alternative, a similar traffic plan would likely be used. The traffic impacts would likely be similar to those experienced during the 2005 major rehabilitation project. Those impacts included high volumes on other Missouri River crossings, and on the streets mentioned above. While volumes were higher on other routes, those routes were able to handle the traffic.

Traffic impacts to motorists that remain on I-29/35 during construction would be minimized through the use of intelligent transportation system (ITS) measures. Efforts would be made to maintain traffic service across I-29/35 along major arterial roadways during any given construction period. The major arterials in the study corridor are: M-210/Armour Road, 16th Avenue, Bedford Avenue/Levee Road, Front Street, Paseo Boulevard, US 24/Independence Avenue, M-9 and Broadway Boulevard. MoDOT will coordinate with local governments to provide information about construction activity and to assist in traffic management.

During subsequent design phases, a detailed traffic maintenance plan will be developed for each individual project. These plans will be coordinated with local jurisdictions. The media, MoDOT web site, ITS and other methods would be used to provide coordinated information to motorists regarding the availability of alternative travel routes.

The traffic impacts of construction would be minimized by increased coordination and promotion of alternative transportation modes. MoDOT will partner with the regional public transportation system to provide information to travelers that an alternate mode choice is available during roadway construction.

T. Navigational Impacts

1. CLEARANCES

For all alignment alternatives river recreation and barge traffic may be impacted for some time during construction. However, after construction is completed, the bridge would not impact recreational or commercial navigation.

2. WATERBORNE COMMERCE

It is possible to have an interim condition during construction of this project where the current Paseo Bridge remains in place while a new structure is being built and the bridge pier locations may not match. However, the location of the navigation channel on the south bank ensures that a minimum distance will be maintained for navigational purposes even in this type of interim condition. The construction of a new bridge at this location will not impact navigational safety and efficiency.

U. Secondary and Cumulative Impacts

The cumulative effect of the actions of other agencies, in relation to the projects detailed in Chapter IV of the DEIS, may result in a more vital area, economically and socially within the Kansas City region.

Cumulative impacts or effects on people and the built environment could include actions by other agencies within the project area such as the North Kansas City redevelopment project at M-210, 16th Avenue Development, Lewis and Clark Expressway, proposed Port Authority riverfront redevelopment, Paseo Boulevard, and the arena/Entertainment District/Bartle Hall/Performing Arts. These are development projects that are independent of the proposed action. These projects would be further supported by improved vehicular access to-and-from north Kansas City, traffic and pedestrian safety from the proposed action. The cumulative effect of the actions of other agencies, in relation to the above-named projects, may result in a more vital area, economically and socially within the Kansas City region. A number of studies were done or are in process that look at access to and from this area. These studies include the Downtown Loop Master Plan, the I-70 MIS and the CBD Traffic Circulation Study. However, the reconstruction of the I-29/35 corridor will not introduce additional cumulative impacts.

Most of the secondary and induced developments normally associated with an interstate highway project have already occurred in the I-29/35 corridor. Development has already occurred all around the corridor. There are some areas where redevelopment is being planned or is occurring. The improvements being made to the roadway system are unlikely to induce additional development.

Secondary impacts of the No-Build Alternative could include those associated with a loss of accessibility within the corridor including increased delays traveling across the Missouri River. Lower levels of access to the Kansas City, Missouri CBD could lead to a decline in employment in this location and a shift of employment to areas outside the CBD. Short-term secondary impacts during construction could include a loss of accessibility to-and-from the north Kansas City area and the CBD leading to a possible minor short-term reduction in economic activity in the CBD. In addition, higher traffic volumes on M-9 and Armour Road may lead to a short-term increase in economic activity in the downtown area of North Kansas City. This increase in economic activity was reported to have occurred by the City of North Kansas City during the Paseo Bridge rehabilitation project in 2005.

Secondary impacts of the build alternatives are expected to be minimal. It is anticipated that the maintenance or improvement of accessibility to the CBD over time would help sustain the current level of employment or possibly support a small growth in employment and re-development of the CBD as an entertainment center.

V. Relationship of Local Short-Term Uses Versus Long-Term Productivity

The build strategies for the I-29/35 corridor would involve some minor short-term consequences. These minor consequences would involve items including: additional noise and air pollution from construction equipment; rerouting traffic; relocation of several businesses; removal of some private properties from tax rolls; and some conversion of woodland, wetland, floodplain and habitat to transportation use. An additional short-term consequence would be the inconvenience to residents, business owners, employees, and Missouri River traffic during construction.

Some of the long-term benefits that may be realized from the build strategies include: improved motorist safety, convenience and energy use; potential for new tax base; greater potential for area economic development because of improved transportation; enhanced industrial development and associated employment growth for the region and state; and improvement on the I-29/35 NAFTA Corridor. Also, there is the long-term potential for partnering with other resource agencies in providing joint development and enhancement opportunities within the I-29/35 corridor.

The local short-term impacts and use of resources by the proposed changes is consistent with the maintenance and enhancement of long-term productivity.

W. Irreversible and Irretrievable Commitment of Resources

The impacts of each of the build alternatives are considered similar in magnitude. Land acquired for constructing or reconstructing the I-29/35 corridor is considered to be an irreversible commitment during the time the land is used for transportation purposes.

The commitment of these resources is to a large part predicated on the basic concept that transportation systems contribute to health, safety and welfare of the local, county and state residents as well as those traveling from other parts of the country. The benefits such as improved access to businesses and community services, increased safety, reduced travel times and increased economic development are expected to outweigh the commitment of resources in the long term.

X. Clarification of the Draft EIS

1. EXHIBITS

a. Exhibit IV-1

- *Exhibit IV-1 Summary of Impacts – North Subcorridor* was revised to reflect a correction in the number of acres of wetlands impacted from 0 to 0.08 for the Build Alternative. The Draft EIS text (Table IV-13 on page IV-52) reflected the correct acreage.
- The tables were updated to reflect the most recent cost estimates.
- The Uses Impact Factors rating scale was revised to reflect a different system than the general rating scale that appears elsewhere in the summary of impacts.

b. Exhibit IV-2

- The tables were updated to reflect the most recent cost estimates.
- The Uses Impact Factors rating scale was revised to reflect a different system than the general rating scale that appears elsewhere in the summary of impacts.

c. Exhibit IV-3

- Exhibit IV-3 was revised to reflect the change in the CBD North Loop Preferred Alternative from Alternative B to Alternative A.
- The tables were updated to reflect the most recent cost estimates.
- The Uses Impact Factors rating scale was revised to reflect a different system than the general rating scale that appears elsewhere in the summary of impacts.

d. Exhibit IV-4

Exhibit IV-4 was revised to show the Receiver I.D. for the noise modeling sites in the study corridor.

Summary of Impacts - North Subcorridor



EVALUATION FACTORS		UNITS	PROJECT ALTERNATIVES	
ENGINEERING & TRAFFIC CONSIDERATIONS			North Subcorridor (Amour Rd. to 14th Ave.)	
PROJECT COST			No-Build	Build
ROADWAY CONSTRUCTION COST ESTIMATE ¹		\$ (Million)	\$22.5	\$49.7
RIVER BRIDGE CONSTRUCTION COST ESTIMATE ¹		\$ (Million)	NA	NA
RIGHT-OF-WAY AND RELOCATION COST ¹		\$ (Million)	NA	\$51.1
TOTAL PROJECT COST ¹		\$ (Million)	\$22.5	\$71.1
30-YEAR OPERATIONS AND MAINTENANCE ¹		\$ (Million)	\$0.4	\$0.8
UNIQUE BRIDGE ADDITIONAL COST		\$ (Million)	NA	NA
CONSTRUCTABILITY ISSUES				
Timing/Staging		Rating	○	●
Difficulty of Construction		Rating	○	●
Traffic Accommodation During Construction		Rating	○	●
Impacts to Adjacent Properties		Rating	○	●
RIVER BRIDGE MAINTENANCE		Rating	NA	NA
RIVER BRIDGE ENHANCEMENT OPPORTUNITY		Rating	NA	NA
RIVER BRIDGE TYPE OPTIONS		Rating	NA	NA
LEVEL OF SERVICE Mainline (2030)		Peak Hour LOS (AM / PM)	E / F	D / D
SAFETY ²				
Crashes 2030 - (PDO)		Number	176	330
Crashes 2030 - (Injury)		Number	506	130
Crashes 2030 - (Fatal)		Number	0	0
Crashes 2030 - (Total)		Number	682	460
Crashes 2030 - (Rate)		Number (HMVMT)	246.1	121.6
SOCIAL CONSIDERATIONS				
TOTAL ACQUISITIONS				
Single-Family Residential		Dwelling Units	0	0
Multi-Family Residential		Dwelling Units	0	0
Business		Establishments	0	1
Public/Semi-Public Facilities ³		Buildings	0	0
PARTIAL ACQUISITIONS				
Single-Family Residential		Number	0	0
Multi-Family Residential		Number	0	1
Business		Number	0	6
Public/Semi-Public Facilities ³		Buildings	0	0
Public/Semi-Public Facilities ³		Number	0	2
NEIGHBORHOOD/COMMUNITY COHESION		Rating	○	○
ECONOMIC ACCESS ⁴		Rating	++	++

EVALUATION FACTORS	UNITS	PROJECT ALTERNATIVES	
		North Subcorridor (Armour Rd. to 14th Ave.)	
		No-Build	Build
ENVIRONMENTAL CONSIDERATIONS			
PARKLAND – Section 4(f)(6)(f)	Number	0	0
Total Permanent Impacts	Acreage	0	0
RIVERFRONT HERITAGE TRAIL	Crossings	0	0
AIR QUALITY	CO	0	0
IMPACTED NOISE RECEPTORS	Dwelling Units	0	28
WATER RESOURCES			
Streams	Number	0	2
	Linear Feet	0	269
Wetlands	Acreage	0	0.08**
Ponds	Acreage	0	0.56**
FLOODPLAINS	Linear Feet	0	1780
	Acreage	0	1.39
NATURAL COMMUNITIES			
Upland Forests	Acreage	0	0.04
Riparian Forests	Acreage	0	0.04
THREATENED & ENDANGERED SPECIES			
	Number	0	0
CULTURAL RESOURCES			
NRHP Listed Historic Properties - Adverse Effect	Number	0	0
NRHP Listed Historic Districts - Adverse Effect	Number	0	0
NRHP Eligible Architectural Resources - Adverse Effect	Number	0	0
NRHP Eligible Historic Districts - Adverse Effect	Number	0	0
NRHP Eligible Bridges - Adverse Effect	Number	0	0
Historic Archaeological Area of Interest - Adverse Effect	Number	0	0
HAZARDOUS WASTE SITES (Hr or Mod. Pot.)	Number	0	0
VISUAL QUALITY / AESTHETICS			
Views Of The Road ⁴	Rating	-	-
Views From The Road ⁴	Rating	-	-

Rating Scale: ○ Low Impact ○ Low/Moderate Impact ● Moderate Impact ● Moderate/High Impact ● High Impact

NOTE: Preferred Alternative shown as shaded.

1 Assumes year 2005 dollars. Low End Cost Estimate = utilizing existing bridges at 16th Avenue, Bedford RR tracks, & Front Street RR tracks.

2 Accident statistics and safety data summarized and presented in this table are protected under federal law. See Appendix A.

3 Does not include public parks/recreation facilities subject to Section 4(f).

4 Uses Impact Factors Rating Scale: ++ Strong Positive + Positive - Neutral -- Strong Negative

**Wetlands and pond impacts are non-judicial.

Summary of Impacts - River Crossing Subcorridor



EVALUATION FACTORS		PROJECT ALTERNATIVES River Crossing Subcorridor (16th Ave. to Dora St.)					
		UNITS	No-Build	A	B-1	B-2	C
ENGINEERING & TRAFFIC CONSIDERATIONS							
PROJECT COSTS							
Roadway Construction Cost Estimate ¹		\$ (Million)	\$23.7	\$84.2	\$66.1	\$76.0	\$76.0
River Bridge Construction Cost Estimate ¹		\$ (Million)	\$13.8	\$49.1	\$54.4	\$54.4	\$54.4
Right-of-Way and Relocation Cost ¹		\$ (Million)	NA	\$3.8	\$3.8	\$4.1	\$8.4
TOTAL PROJECT COST ¹		\$ (Million)	\$37.5	\$117.1	\$124.3	\$134.5	\$138.8
30-Year Operations and Maintenance		\$ (Million)	\$0.5	\$0.9	\$0.9	\$0.9	\$0.9
Unique Bridge Additional Cost		\$ (Million)	NA	\$14.1 to \$16.2	\$3.5 to \$39.5	\$3.5 to \$39.5	\$3.5 to \$39.5
CONSTRUCTABILITY ISSUES							
Timing/Staging		Rating					
Difficulty of Construction		Rating					
Traffic Accommodation During Construction		Rating					
Impacts to Adjacent Properties		Rating					
RIVER BRIDGE MAINT ENHANCE		Rating					
RIVER BRIDGE ENHANCEMENT OPPORTUNITY		Rating					
RIVER BRIDGE TYPE OPTIONS		Rating					
LEVEL OF SERVICE: Mainline (2030)		Peak Hour LOS (AM / PM)	F / F	D / D	D / D	D / D	D / D
SAFETY ²							
Crashes 2030 - (PDO)		Number	272	365	399	399	399
Crashes 2030 - (Injury)		Number	837	212	155	155	155
Crashes 2030 - (Fatal)		Number	1	0	0	0	0
Crashes 2030 - (Total)		Number	1,110	577	554	554	554
Crashes 2030 - (Rate)		Number (HMMT)	333.3	156.6	121.6	121.6	121.6
SOCIAL CONSIDERATIONS							
TOTAL ACQUISITIONS							
Single-Family Residential		Dwelling Units	0	0	0	0	0
Multi-Family Residential		Dwelling Units	0	0	0	0	0
Business		Establishments	0	0	0	0	0
Public/Semi-Public Facilities ³		Buildings	0	0	0	0	0
PARTIAL ACQUISITIONS							
Single-Family Residential		Number	0	0	0	0	0
Multi-Family Residential		Number	0	0	0	0	0
Business		Buildings	0	20	20	20	20
Public/Semi-Public Facilities ³		Buildings	0	7	7	6	6
NEIGHBORHOOD/COMMUNITY COHESION		Rating					
ECONOMIC ACCESS ⁴		Rating	++	+	+	+	++

EVALUATION FACTORS		PROJECT ALTERNATIVES River Crossing Subcorridor (16th Ave. to Dora St.)					
		UNITS	No-Build	A	B-1	B-2	C
ENVIRONMENTAL CONSIDERATIONS							
PAVING Section 4(f)(3)(F)		Number Acres	0	0	0	0	0
Total Permanent Impacts		Acres	0	0	0	0	0
RIVERFRONT HERITAGE TRAIL		Crossings	0	1	1	1	1
AIR QUALITY		Exceedances	0	0	0	0	0
IMPACTED NOISE RECEPTORS		Dwelling Units	0	0	0	0	0
WATER RESOURCES		CO					
Streams		Number	0	1	1	1	1
Upland Forests		Linear Feet	0	0	0	0	0
Wetlands		Acres	0	0	0	0	0
Ponds		Acres	0	0	0	0	0
FLOODPLAINS		Linear Feet	0	120	120	370	370
NATURAL COMMUNITIES		Acreage	0	0.2	0.2	0.49	0.49
Upland Forests		Acres	0	0	0	0	0
Riparian Forests		Acres	0	0.6	0.6	0.6	1.26
THREATENED & ENDANGERED SPECIES		Number	0	1	1	1	1
CULTURAL RESOURCES							
NHPH Listed Historic Properties - Adverse Effect		Number	0	0	0	0	0
NHPH Listed Historic Districts - Adverse Effect		Number	0	0	0	0	0
NHPH Eligible Historic Resources - Adverse Effect		Number	0	0	0	0	0
NHPH Eligible Historic Districts - Adverse Effect		Number	0	0	0	0	0
NHPH Eligible Bridges - Adverse Effect		Number	0	0	1	1	1
NHPH Eligible Historic Structures - Adverse Effect		Number	0	0	0	0	0
HAZARDOUS WASTE SITES (H or I or C or P or T)		Number	0	1	1	2	2
VISUAL QUALITY / AESTHETICS		Rating					
Views Of The Road ⁴		Rating	++	++	+	+	+
Views From The Road ⁴		Rating					
Rating Scale: ○ Low Impact ○ Low/Moderate Impact ○ Moderate/High Impact ● High Impact							

NOTE: Preferred Alternative shown as shaded. Alternative A or B is the Preferred Alternative for the River Crossing. This means that A, B-1 or B-2 could be selected.

1 Assumes year 2005 dollars. Low End Cost Estimate = utilizing existing bridges at 16th Avenue, Bedford RR tracks, & Front Street RR tracks.
2 Accident statistics and safety data summarized and presented in this table are protected under Federal law. See Appendix A.
3 Public/Semi-Public Facilities include schools, libraries, community centers, etc.
4 Uses Impact Factors Rating Scale: ++ Strong Positive, + Neutral, - Negative, -- Strong Negative.

Rating Scale: ○ Low Impact ○ Low/Moderate Impact ● Moderate Impact ● High Impact
 NOTE: Preferred Alternative shown as shaded. Alternative A or B is the Preferred Alternative for the River Crossing.
 This means that A, B-1 or B-2 could be selected.

- 1 Assumes year 2005 dollars. Low End Cost Estimate - utilizing existing bridges at 16th Avenue, Bedford RR tracks, & Front Street RR tracks.
- 2 Does not include public parks/recreation facilities protected under federal law. See Appendix A.
- 3 Does not include public parks/recreation facilities subject to Section 4(f).
- 4 Uses Impact Factors Rating Scale: ++ Strong Positive + Positive +-Neutral - Negative -- Strong Negative

Summary of Impacts - CBD North Loop Subcorridor



EVALUATION FACTORS		PROJECT ALTERNATIVES		
		CBD North Loop Subcorridor (Dora St. to Broadway)		
ENGINEERING & TRAFFIC CONSIDERATIONS		No-Build	A	B
PROJECT COST				
Right-of-Way and Relocation Cost ¹				
Wayway Construction Cost Estimate ²	\$ (Million)	\$40.2	\$44.6	\$75.1
River Bridge Construction Cost Estimate ¹	\$ (Million)	NA	NA	NA
Right-of-Way and Relocation Cost ¹	\$ (Million)	NA	\$1.0	\$1.0
TOTAL PROJECT COST ¹	\$ (Million)	\$40.2	\$45.6	\$76.1
30-Year Operations and Maintenance Costs	\$ (Million)	\$0.4	\$0.7	\$0.7
Unique Bridge Additional Costs	\$ (Million)	NA	NA	NA
CONSTRUCTIBILITY ISSUES				
Timing/Staging	Rating	○	○	●
Difficulty of Construction	Rating	○	○	●
Traffic Accommodation During Construction	Rating	○	○	●
Impacts to Adjacent Properties	Rating	○	○	○
RIVER BRIDGE MAINTENANCE	Rating	NA	NA	NA
RIVER BRIDGE ENHANCEMENT OPPORTUNITY	Rating	NA	NA	NA
RIVER BRIDGE TYPE OPTIONS	Rating	NA	NA	NA
LEVEL OF SERVICE - Mainline (2030)	Peak Hour LOS (AM / PM)	D / D	C / C	C / C
SAFETY ²				
Crashes 2030 - (PDO)	Number	260	163	163
Crashes 2030 - (Injury)	Number	828	63	63
Crashes 2030 - (Fatal)	Number	1	0	0
Crashes 2030 - (Total)	Number	1,089	226	226
Crashes 2030 - (Rate)	Number (HVM/MT)	577.5	121.6	121.6
SOCIAL CONSIDERATIONS				
TOTAL ACQUISITIONS				
Single-Family Residential	Dwelling Units	0	0	0
Multi-Family Residential	Dwelling Units	0	0	0
Business	Establishments	0	7	7
Public/Semi-Public Facilities ³	Buildings	0	0	0
PARTIAL ACQUISITIONS				
Single-Family Residential	Number	0	3	4
Multi-Family Residential	Number	0	0	0
Business	Number	0	0	0
Public/Semi-Public Facilities ³	Number	0	0	0
NEIGHBORHOOD/COMMUNITY COHESION				
ECONOMIC CONSIDERATIONS				
ECONOMIC ACCESS ⁴		+	+	++
Rating				

EVALUATION FACTORS		PROJECT ALTERNATIVES		
		CBD North Loop Subcorridor (Dora St. to Broadway)		
ENVIRONMENTAL CONSIDERATIONS		No-Build	A	B
PARKLAND – Section 4(f)(6)(f)				
Total Permanent Impacts	Number	0	0	0
RIVERFRONT HERITAGE TRAIL	No. of Crossings	0	0	0
AIR QUALITY	Exceedences	0	0	0
IMPACTED NOISE RECEPTORS	Dwelling Units	0	78	78
WATER RESOURCES				
Streams	Number	0	0	0
Wellands	Linear Feet	0	0	0
Ponds	Acres	0	0	0
FLOODPLAINS	Acres	0	0	0
NATURAL COMMUNITIES	Linear Feet	0	0	0
Upland Forests	Acres	0	0	0
Riparian Forests	Acres	0	0	0
THREATENED & ENDANGERED SPECIES	Number	0	0	0
CULTURAL RESOURCES	Number	0	0	0
NRHP Listed Historic Properties - Adverse Effect	Number	0	0	0
NRHP Listed Historic Districts - Adverse Effect	Number	0	0	0
NRHP Eligible Architectural Resources - Adverse Effect	Number	0	0	0
NRHP Eligible Historic Districts - Adverse Effect	Number	0	0	0
Historic Archaeological Area of Interest - Adverse Effect	Number	0	0	0
HAZARDOUS WASTE SITES (H or Mod. Pot.)	Number	0	0	2
VISUAL QUALITY / AESTHETICS	Number	0	0	0
Views Of The Road ⁴	Rating	-	-	+
Views From The Road ⁴	Rating	+	+	+

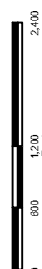
Rating Scale: ○ Low Impact ○ Low/Moderate Impact ○ Moderate Impact ○ Moderate/High Impact ● High Impact

NOTE: Preferred Alternative shown as shaded.
 1 Assumes year 2030 dollars. Low End Cost Estimate = utilizing existing bridges at 16th Avenue, Bedford RR tracks, & Front Street RR tracks.
 2 Does not include public park/recreation facilities subject to Section 4(f).
 3 Does not include public park/recreation facilities subject to Section 4(f).
 4 Uses Impact Factors Rating Scale: ++ Strong Positive + Positive - Neutral - Negative -- Strong Negative

LEGEND

EXHIBIT IV-4

Noise Sites & Noise Barriers



Note: Future land use is shown only where it differs from existing land use.

that are both feasible and reasonable are shown on this exhibit.

